APR-2003

SERVICE MANUAL

US Model AEP Model

SPECIFICATIONS

Tape & Reel size 6.25 mm ($\frac{1}{4}$ ") 5" Reel Tape speed 19 cm/s ($7\frac{1}{2}$ ips),

9.5 cm/s (33/4 ips)

Audio track width 2.1 m/m for each track

REC LEVEL 185 nwb/m at 0 dB Time code track width

0.38 ±8:83 mm

Time accuracy of audio & time code track

Less than 8 msec (at tape speed 19 cm/s)

LINE IN/MIC input (selectable) XLR type

Min input level

LINE: -10 dBs (-20 dBs-+20 dBs set by internal

wiring)

MIC: -70 dBs. -50 dBs (at 20 dB ATT)

0 dBs = 0.775 V

Impedance LINE: 47 kilohm balanced

MIC: 10 kilohm balanced

DC POWER for MIC

DC 48 V (7 mA/CH) or 12 V (10 mA/CH) A-B with

OFF switch

XLR type

Input level

0.5-5 Vp-p

Impedance

10 kilohm, balanced XLR type

Line output

Time code input

Output level 0 dBs at 47 kilohm

Impedance EXT. NR Input & output

600 ohm unbalanced TUCHEL 7-p type

Output level

0 dBs

Impedance

100 ohm unbalanced

Input level 0 dB

Impedance

0 dBs

e 47 kilohm unbalanced

Monitor output (12V, 1kHz)

Install speaker (16 ohm)

500 mW

Headphones 1 mW (at 32 ohm)

Frequency response (AMPEX 456)

19 cm/s 30-15000Hz ±2dB

25-18000Hz ±3dB

9.5 cm/s 30-10000Hz ±2dB

Signal to Noise ratio (at 510nwb/m AMPEX 456)

19 cm/s More than 58 dB

61 dB ("A" WEIGHTED)

9.5 cm/s 57 dB

60 dB ("A" WEIGHTED)

Total harmonic distortion (1kHz, 510nwb/m, AMPEX 456)

19 cm/s Less than 2%

9.5 cm/s Less than 2.5%

Rec limiter characteristic

Suppressed 8 dB at +20 dB input

Warm-up time of power

Less than 1 sec

Erase efficiency (at 1kHz)

More than 70 dB

- Continued on pige 2 -

SAFETY-RELATED COMPONENT WARNING!

COMPONENTS IDENTIFIED BY SHADING AND WARK

ON THE SCHEMATIC DIAGRAMS AND IN THE
PARTS LIST ARE CRITICAL TO SAFE OPERATION.
REPLACE THESE COMPONENTS WITH SONY ARETS
WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS
MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.





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Crosstalk (at 1kHz)

More than 45 dB Between audio track Audio track & time code track 80 dB

Bias frequency 160 kHz

19 cm/s ±0.08% DIN, 0.05% WRMS NAB Wow & Flutter

9.5 cm/s ±0.12% DIN, 0.08% WRMS NAB

Speed stability

19 cm/s & 9.5 cm/s ±0.3% Approx. 60sec (185 m tape)

FF/RWD TIME TAPE COUNTER 3 digits mechanical

Power

Power supply voltage and current necessary

DC 10-14 V, 2 A

Rechargeable battery (optional)

NP-1 (Battery life: More than

2H)

Ac adaptor (optional)

AC-500, AC-500CE Approx. 700 mA (NP-1)

REC FWD Current

Approx. 750 mA (EXT. DC)

FF/FWD Current

Approx. 700 mA (NP-1)

Approx. 750 mA (EXT. DC)

Dimension

 $335(w) \times 140(h) \times 300(d)$ mm

 $(13^{1}/_{4} \times 5^{5}/_{8} \times 11^{7}/_{8}")$

Weight

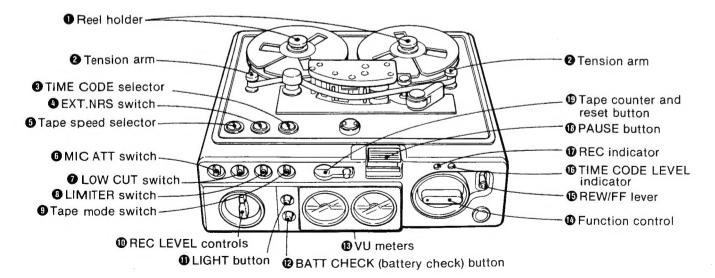
Approx. 6.7 kg (with NP-1)

SECTION 1 OUTLINE

FUNCTION OF CONTROLS

Each number in the text is keyed to the illustrations.

Front panel



Reel holders

@ Tension arms

10 TIME CODE selector

Normally, keep it at OFF.

For recording with the optional time code generator, set it to SMPTE/EBU. Time code recording can only be made when the tape speed selector is set to 19 cm/s $(7\frac{1}{2} \text{ ips})$.

Ø EXT. NRS switch

For recording with a noise reduction unit, set this switch to NRS (ON).

For recording without noise reduction system, set it to NORMAL (OFF). Recording cannot be made with this switch set to ON when a noise reduction unit is not connected to the EXT. NRS connector.

Tape speed selector

Select a tape speed appropriate to the type of recording desierd (19 cm/s, $7^{1/2}$ ips or 9.5 cm/s, $3^{3/4}$ ips).

6 MIC ATT (microphone attenuator) switch

Set this switch to ON to attenuate the microphone input level by 20 dB.

LOW CUT switch

Set this switch to ON to attenuate frequencies lower than 100 Hz by 6 dB/oct.

LIMITER switch

Normally, leave it OFF.

Set it to ON to maintain the reference recording level and to eliminate undesirable distortion.

Tape mode switch (TAPE/SOURCE)

Set it to TAPE for tape playback. While recording, set it to TAPE for tape monitoring, and set it to SOURCE for source monitoring.

OREC LEVEL controls

Varies the recording level. The outer knob controls CHANNEL 1 and the inner knob controls CHANNEL 2.

© LIGHT button

Illuminates the VU meters as long as the button is pressed.

BATT CHECK (battery check) button

Keep pressed to check the battery condition during recording or playback. When the needle of the right VU meter registers outside the green zone, the battery should be recharged.

® VU meters

Indicates the recording level when the tape mode switch is set to SOURCE. When the tape mode switch is set to TAPE, the meters indicate the playback level. (0 VU = 185 nwb/m (NAB))

®TIME CODE LEVEL indicator

Lights up when a correct input signal is fed from the TIME CODE IN connector.

® REC indicator

@PAUSE button

Depress this button to pause momentarily during playback or recording. To release, press it again.

Tape counter and reset button

@ Function control

Set to PLAY for playback and to STOP to stop the tape.

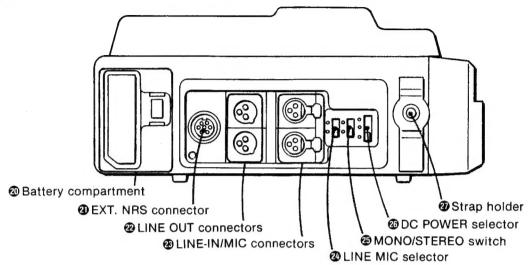
To record, push and turn towards REC.

To activate this control, the REW/FF lever **1** must be at stop position.

@REW/FF lever

Set the lever to REW to rewind the tape. Pull the lever and push down to FF to advance the tape rapidly. To activate this lever, the function control **@** mustbe set at STOP.

Left side panel



@ Battery compartment

Insert an optional rechageable battery pack Sony NP-1.

@EXT. NRS connector

(Tuchel type, 7-P)
Connect a noise reduction unit here to record with the Dolby A NR system.

@LINE OUT connectors

(XLR-3-32, unbalanced)
Produce the line output signals.

® LINE IN/MIC connectors

(XLR-3-31, balanced)

Receive either line input or microphone signals according to the LINE/MIC selector setting.

@LINE/MIC selector

Selects the input source connected to the LINE IN/MIC connectors.

MONO/STEREO switch (for microphone)

Set it to STEREO for stereo recording with two microphones. Set it to MONO for monaural recording with one microphone, in which case, the microphone must be connected to the CHANNEL 1 connector.

DC POWER selector (for microphone)

Selects a setting to match the microphone's power requirements. LINE IN/MIC connectors can supply 12 V dc (10 mA/channel) or 48 V dc (7 mA/channel) to externally powered microphones. Set the DC POWER selector to the appropriate position when the tape recorder is in the stop mode, otherwise a click sound may be heard. Use the following settings.

48 V: For phantom powered condenser microphones.

OFF: For microphones requiring no external power.

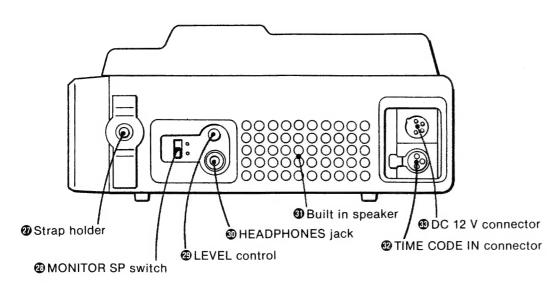
12 V A-B: For microphones with an AB feed powering system.

Set the DC POWER selector to 12 V A-B only for a microphone with an AB feed powering system. Otherwise, the microphone may be damaged.

Strap holder

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Right side panel



® MONITOR SP switch

Set this switch to ON to monitor from the built-in speakers during recording and playback. You can alter the volume of the built-in speaker by adjusting the LEVEL control.

⊕ LEVEL control

Varies the output level of the built-in speaker and the headphones. This control does not affect the VU meters or the output level of the LINE OUT connectors.

® HEADPHONES jack

Accepts any low impedance stereo headphones. The output level can be varied with the LEVEL control. When the headphones are connected, the built-in speaker is automatically disconnected.

Built-in speaker

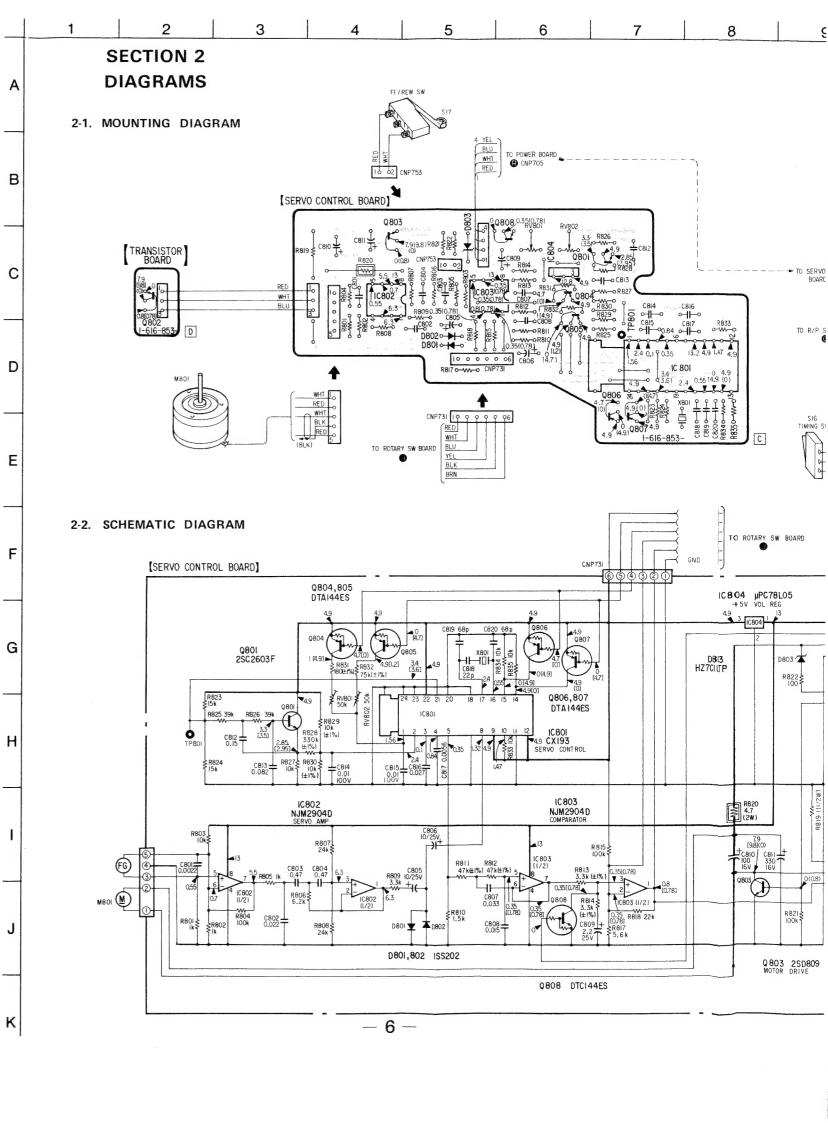
® TIME CODE IN connector

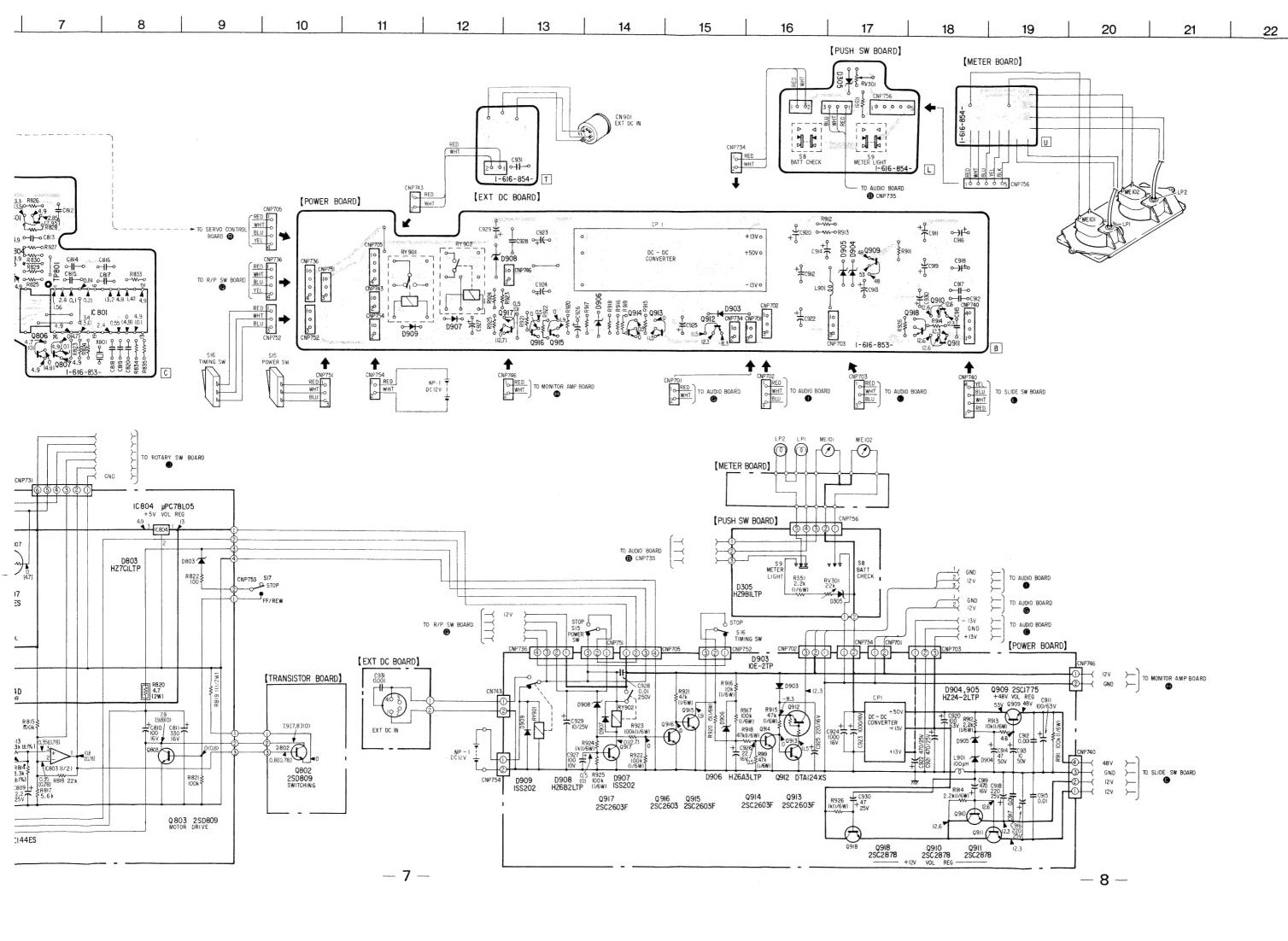
(XLR-3-31, balanced)
Accepts an optional time code generator such as the Sony BVG-100.

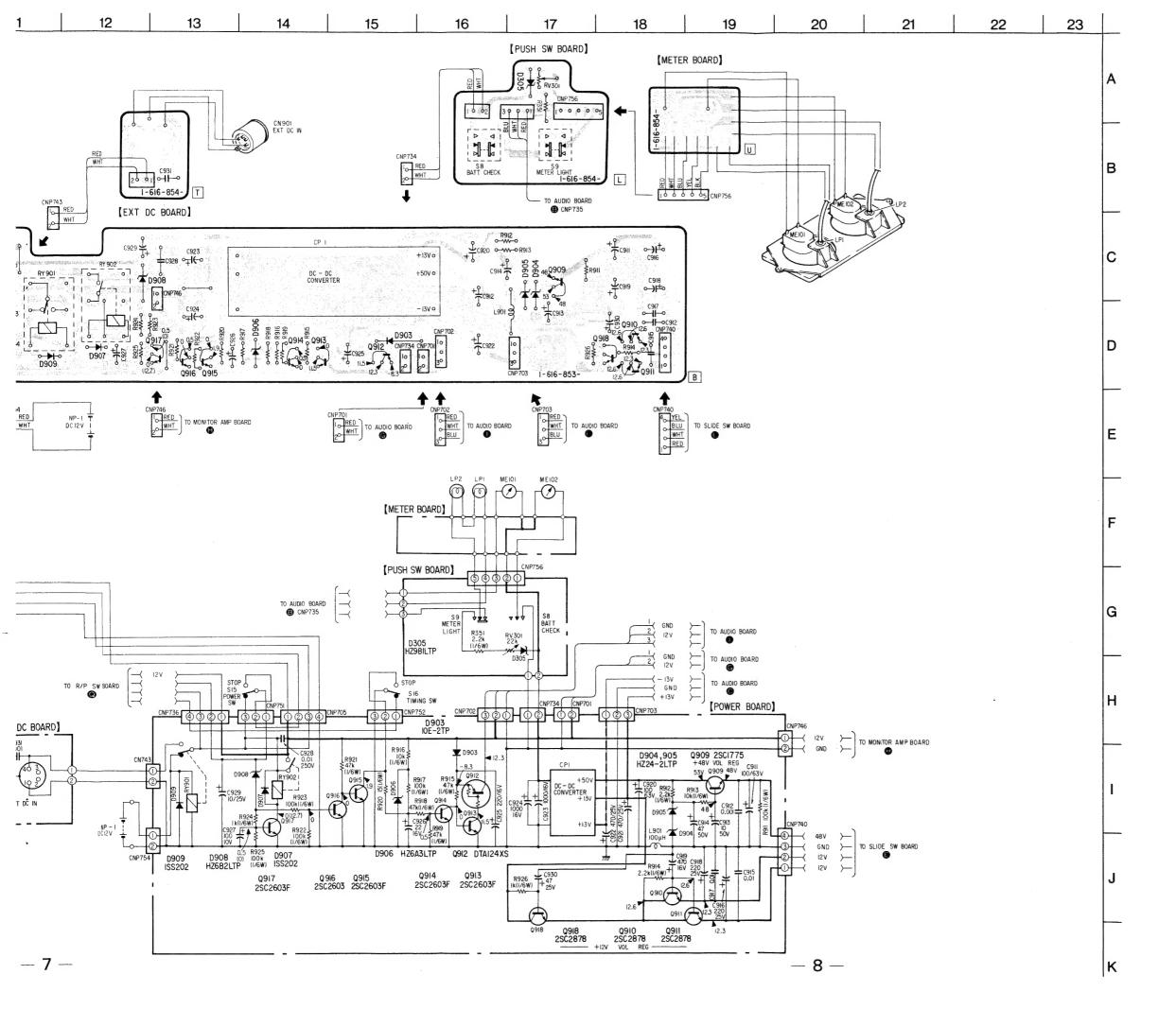
@ DC 12 V connector

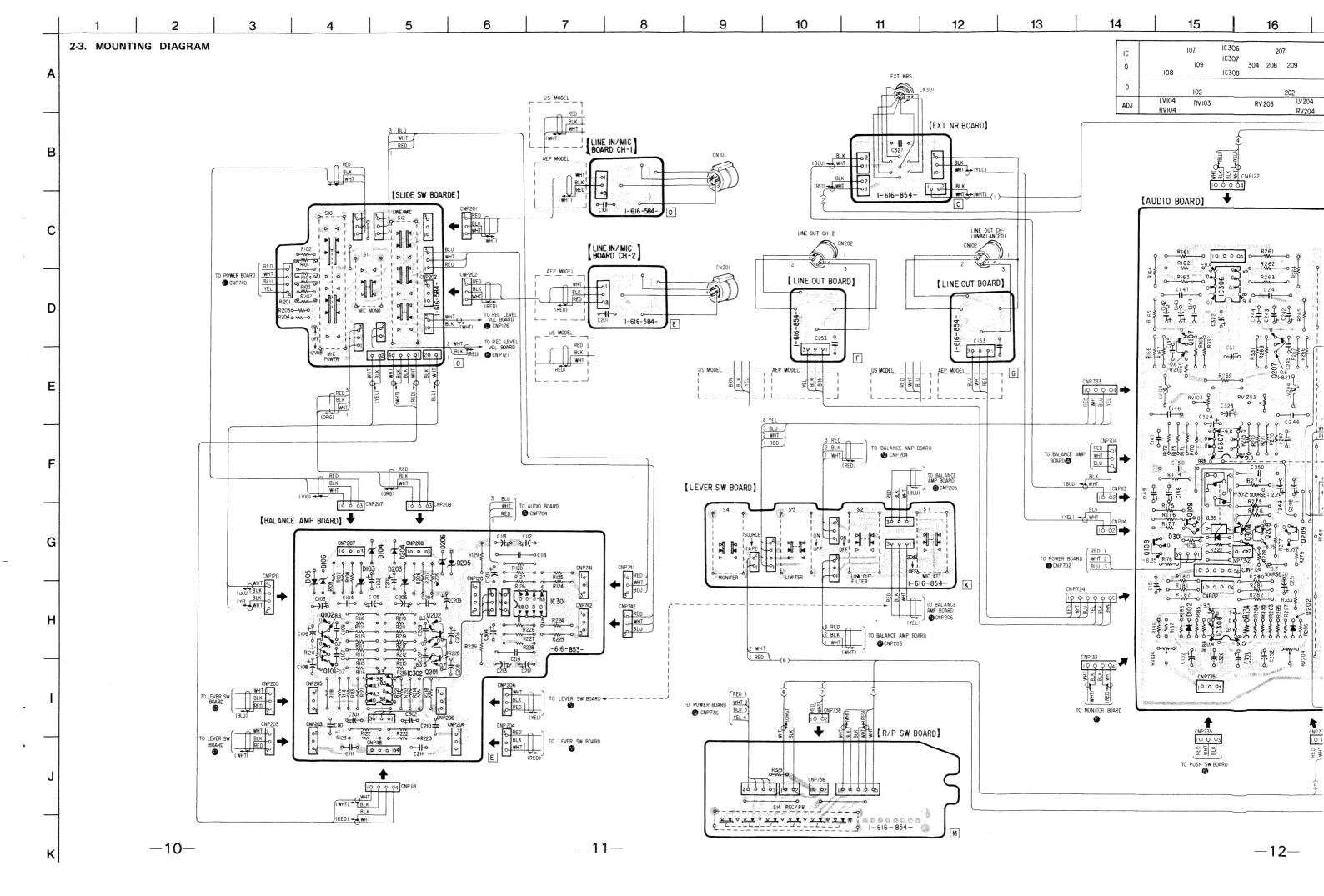
(XLR-4-32)

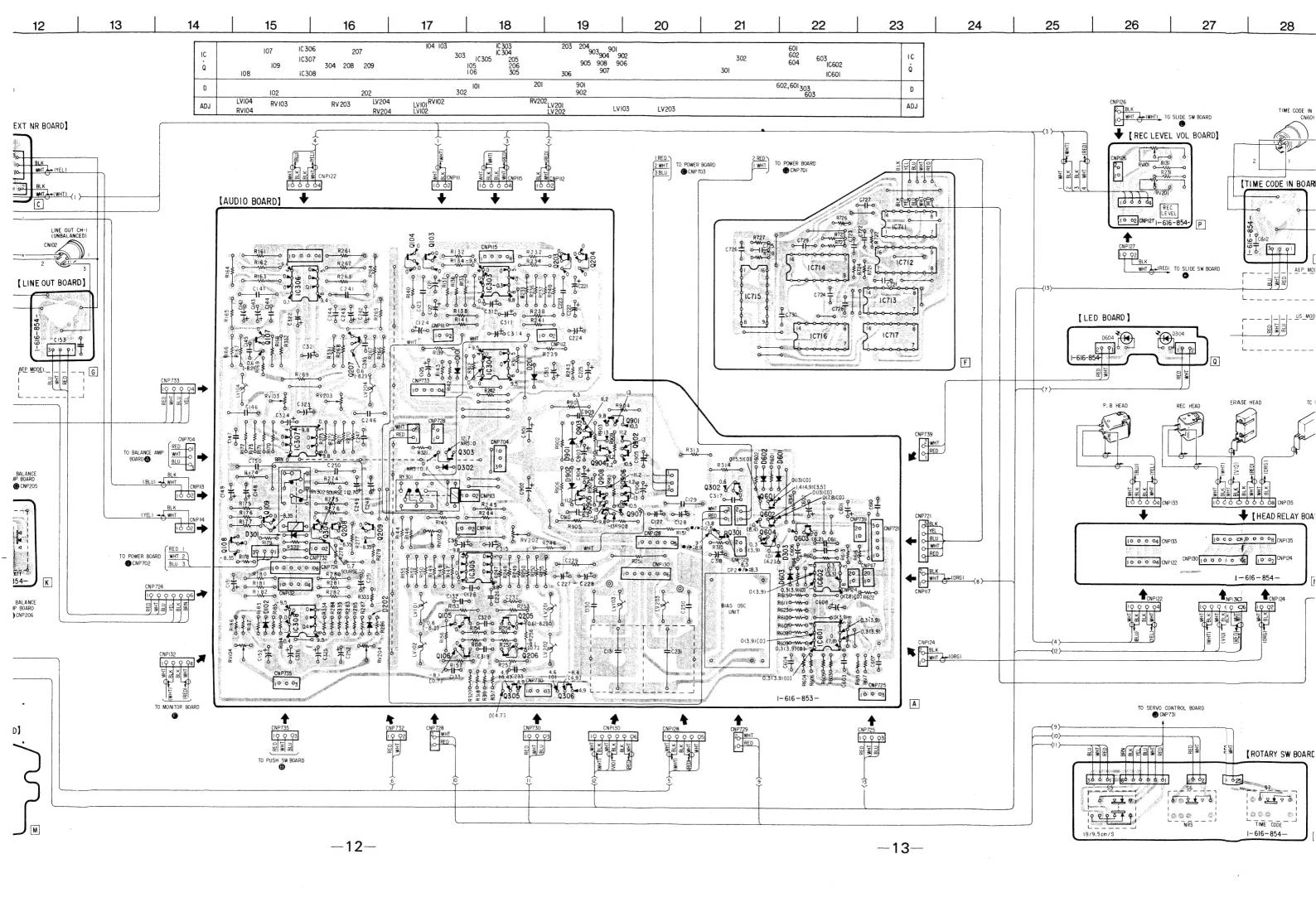
Must be used only with the Sony AC-500/AC-500CE optional ac power adaptor.

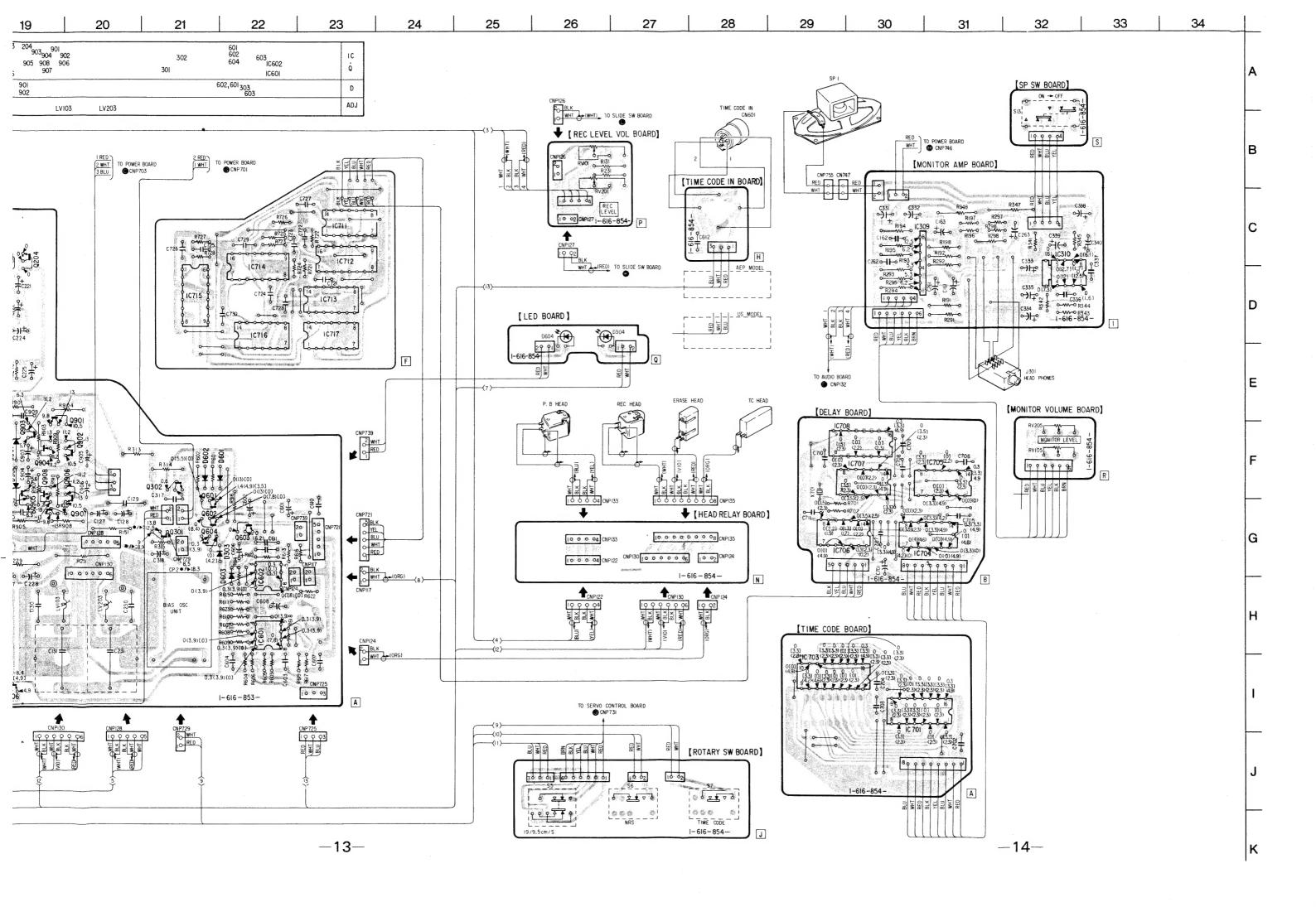


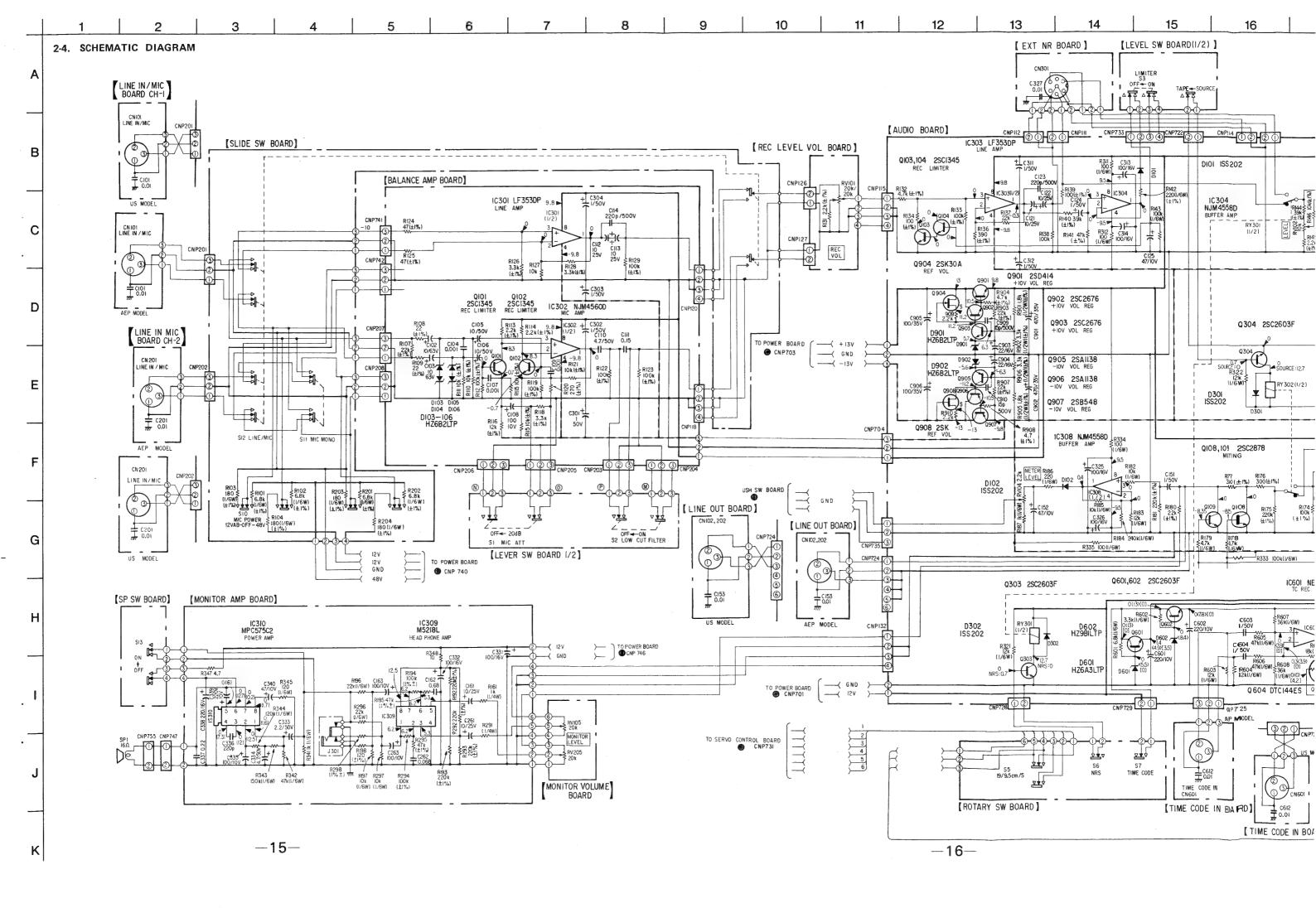


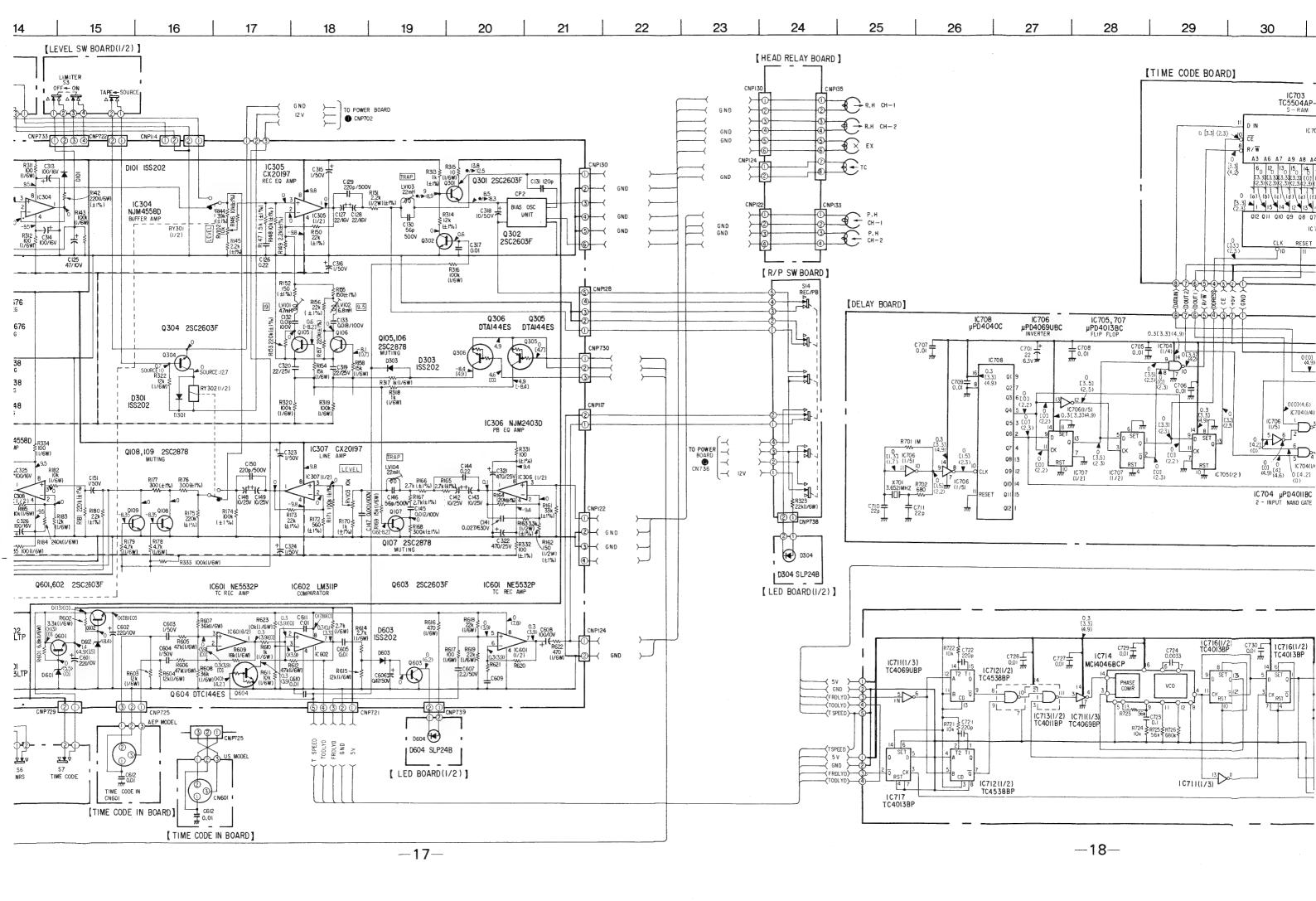


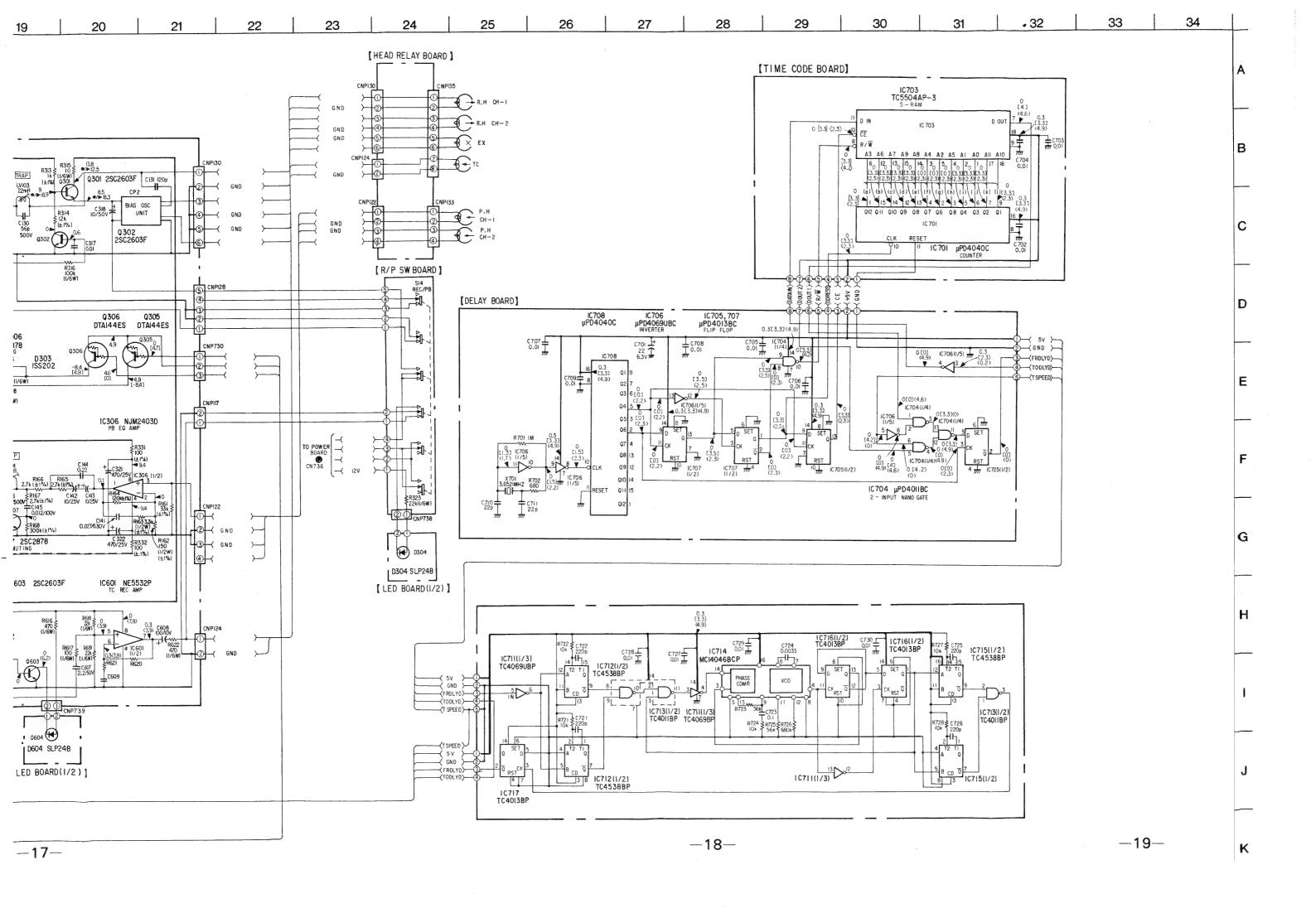












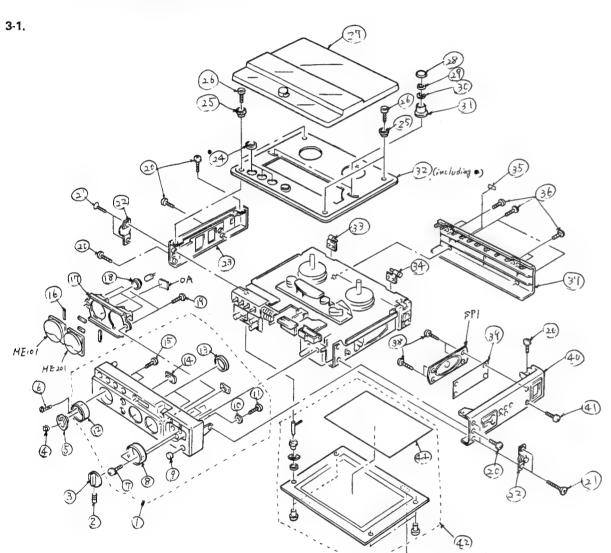
SECTION 3 EXPLODED VIEWS AND PARTS LIST

NOTE

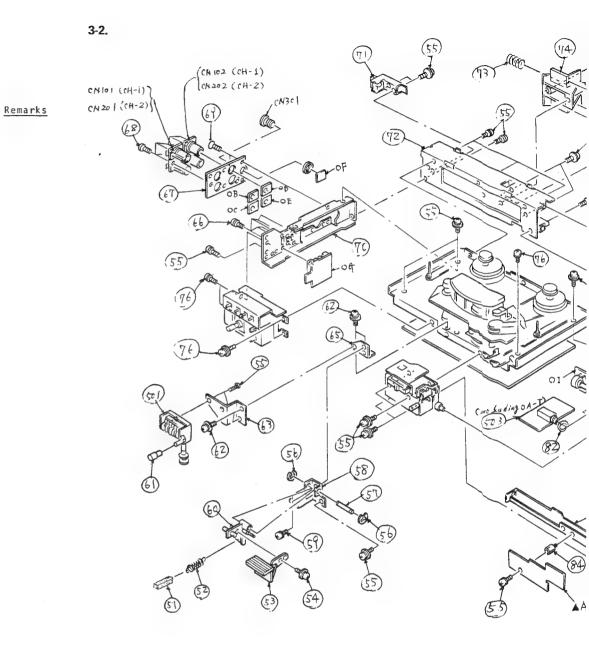
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

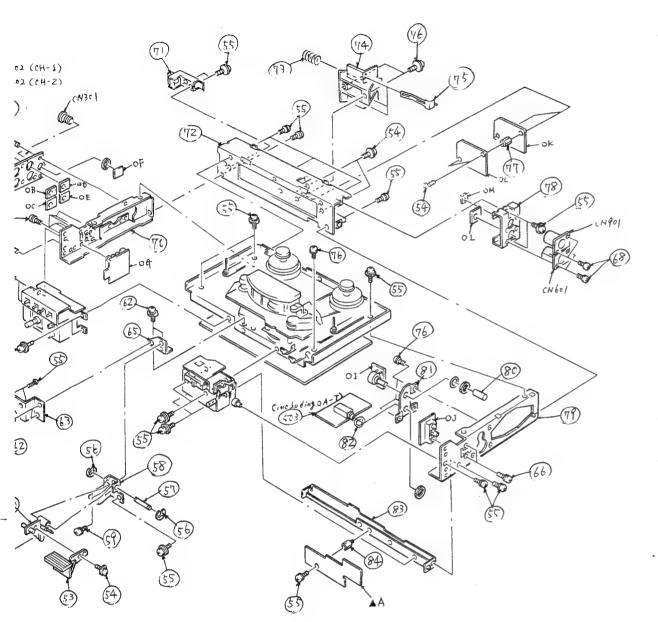
The components identified by shading and mark Aare critical for safety.

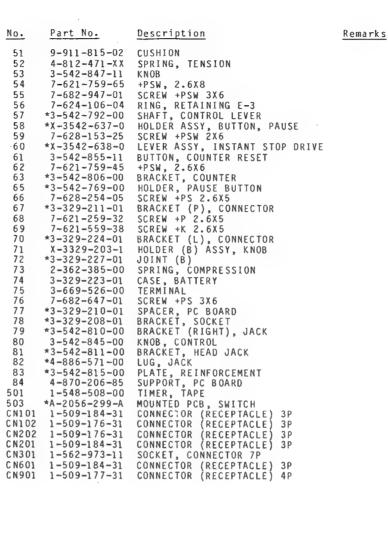
Replace only with part number specified.

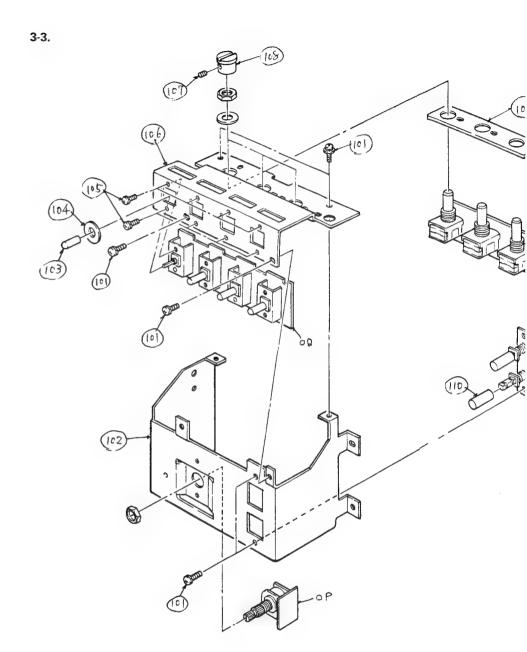


Description Part_No. *X-3542-652-5 COVER ASSY, FRONT COVER ASSY, FRONT
SC 4X6, HEXAGON SOCKET
CONVERTER ASSY
KNOB (R), RECORD LEVEL
KNOB (L), RECORD LEVEL
SCREW +B 3X6
SCREW +PSW 3X6
ESCUTCHEON, SELECTOR
EMBLEM ASSY
W 2 SMALI 7-683-247-31 X-3542-654-2 3-542-842-11 3-542-843-11 7-682-547-05 7-682-947-01 *3-542-723-11 X-3542-653-4 7-688-001-01 7-621-255-45 *3-542-722-11 W 2, SMALL SCREW +P 2X6 ESCUTCHEON, CONTROL *3-542-721-11 *3-542-720-00 7-682-224-01 9-911-815-02 *3-542-814-00 ESCUTCHEON, METER WINDOW, COUNTER SCREW +K 2X4 CUSHION BRACKET, METER BRACKET, METER
HOLDER, LAMP
SCREW +B 3X6
SCREW +B 3X4
SCREW +K 3X20
BRACKET ASSY, STRAP
PLATE (LEFT) (B) ASSY, SIDE
RING (B), ORNAMENTAL, KNOB
SPACER, PANEL
BOLT, HEXAGON SOCKET 2.6X6
PROTECTOR ASSY, DUST
ROLLER (A), TENSION
RING, RETAINING E-1.5 3-442-022-02 7-682-547-01 7-682-546-05 7-682-253-05 X-3542-659-0 X-3329-205-1 3-329-212-01 3-542-830-11 7-621-996-04 X-3329-209-1 3-542-791-03 ROLLER (A), TENSION
RING, RETAINING E-1.5
WASHER
ROLLER (B) ASSY, TENSION
PANEL ASSY (B), REEL
HINGE (E) ASSY
HINGE (B) ASSY 7-624-102-04 3-701-437-01 X-3542-616-5 X-3329-208-1 X-3542-668-0 X-3542-658-0 *3-329-201-01 7-683-403-04 HINGE (B) ASSY
LABEL, MODEL NUMBER
BOLT, HEXAGON SOCKET 3X6
PLATE, CABINET BOTTOM
SCREW +P 3X5 TYPE2 NON-SLIT
NET, SPEAKER
PLATE (RIGHT) (B) ASSY, SIDE
SCREW +B 3X12 3-542-875-11 7-685-144-11 3-542-896-00 X-3329-206-1 7-682-550-05 7-682-246-01 SCREW +B 3X12 X-3329-204-1 LID ASSY, REAR *3-329-901-01 LABEL, CAUTION, BOTTOM PLATE 3-542-899-03 PLATE, REAR LID SHIELD 2-362-388-21 LID, BATTERY 2-362-324-00 SHAFT, BATTERY LID 3-329-206-01 SPRING (A), TORSION *3-542-724-00 BRACKET (RIGHT), FRONT COVER *3-542-725-00 BRACKET (LEFT), FRONT COVER 7-682-246-01 SCREW +K 3X5 1-520-484-11 METER, LEVEL 1-520-484-21 METER, LEVEL 1-502-541-00 SPEAKER, CONE









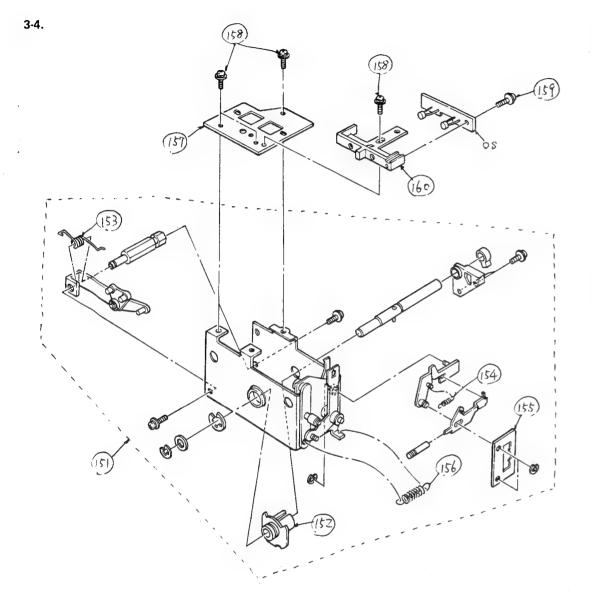
No. Part No. Description Remarks 3-3. 51 9-911-815-02 CUSHION TOUSION	
52 4-812-471-XX SPRING, TENSION 53 3-542-847-11 KNOP 54 7-621-759-65 +PSW, 2.6X8 55 7-682-947-01 SCREN #PSW 3X6 55 7-682-947-01 SCREN #PSW 3X6 56 7-622-947-01 SCREN #PSW 3X6 57 7-622-947-02 SCREN #PSW 3X6 58 *X-5342-637-0 MOLDER ASSY, BUTTON, PAUSE 59 7-628-153-25 SCREN #PSW 2X6 61 3-542-855-11 BUTTON, COUNTER RESET 62 7-621-759-45 *PSW, 2.6X6 63 *3-642-860-00 BRACKET, COUNTER 63 *3-642-865-11 BUTTON, COUNTER RESET 64 7-621-759-36 SCREN *PSW, 2.6X5 65 7-621-559-38 SCREN *PSW, 2.6X5 66 7-621-559-38 SCREN *PSW, 2.6X5 67 7-621-559-38 SCREN *PSW, 2.6X5 69 7-621-59-39 SCREN *PSW, 2.	

No. Part No. Description

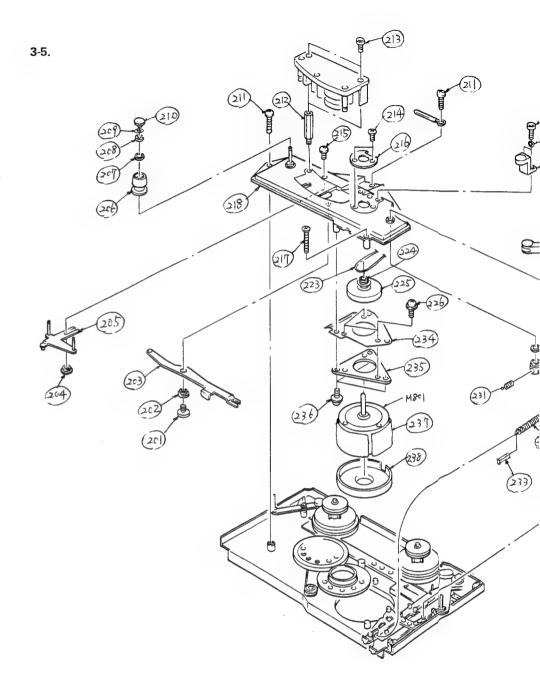
101 7-682-647-01 SCREW +PS 3X6
102 *3-542-813-00 BRACKET (B), SWITCH
103 3-329-215-01 KNOB, LEVER SWITCH
104 3-533-938-00 CLOTH
105 7-628-254-05 SCREW +PS 2.6X5
106 *3-542-812-00 BRACKET (A), SWITCH
107 7-683-237-31 SC 3X3, HEXAGON SOCKET
108 3-329-217-01 KNOB, MODE SELECTION
109 *3-329-209-01 SPACER (A)
110 3-542-840-21 KNOB, RECORD MODE

Remarks

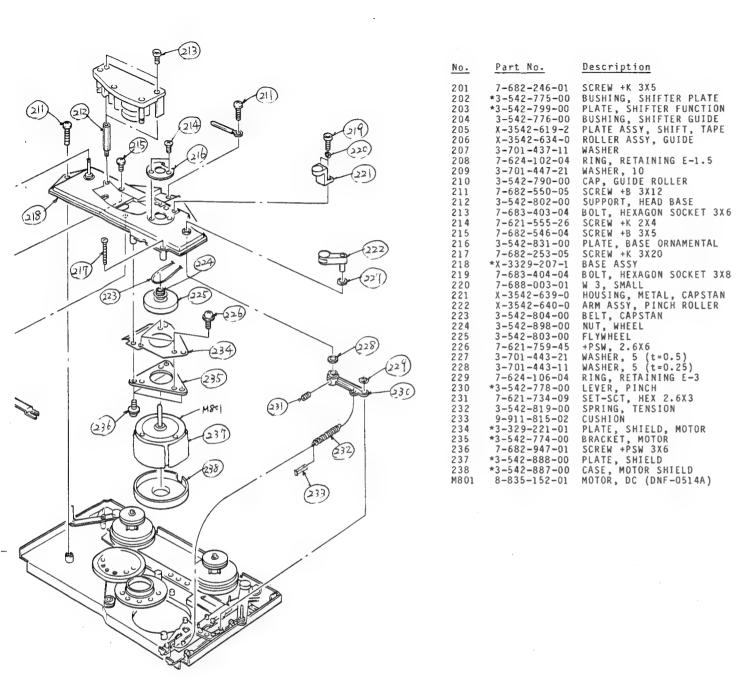
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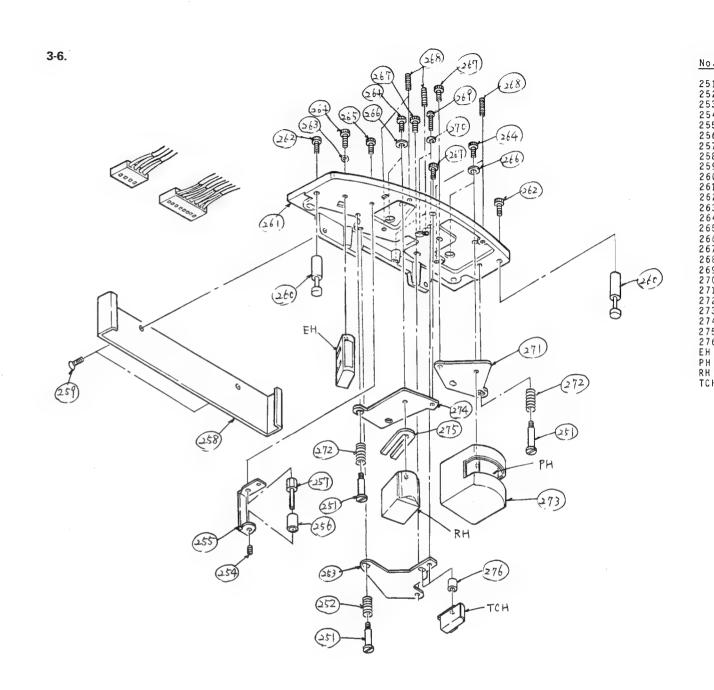


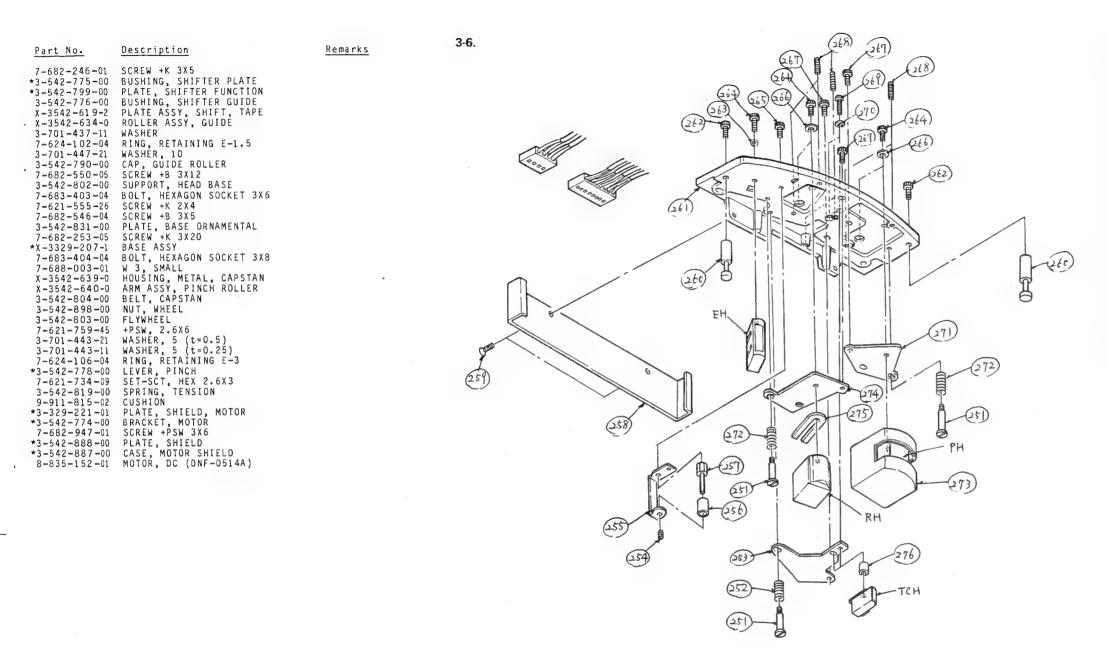
No.	Part No.	Description	Remarks
151		CONVERTER COMPLETE ASSY	
152	*3-542-644-00	CAM, SELECTOR	
153 154	3-542-648-00	SPRING SPRING, TENSION	
155	*3-542-800-00	PLATE, CLICK	
156	3-542-865-00	SPRING, TENSION	
157	*3-542-777-00	BRACKET, REC SWITCH	
158 159	7-621-759-45 7-685-533-21	+PSW, 2.6X6	
160	*3-542-851-00	SCREW +BTP 2.6X6 TYPE2 SLIT BRACKET, REC LAMP	
161	*X-3542-622-0		
	*X-3542-623-0	LEVER (A) ASSY, CONTROL	
163		LEVER (B) ASSY, CONTROL	
164 165	*X-3542-625-0	LEVER A ASSY, FF & REW LEVER A ASSY, CONVERTER	
166	X-3542-627-0	SHAFT ASSY, CONTROL	
167	*3-542-643-00	ROLLER	
168	3-542-645-00	PIECE, CLICK	
169 170	*3-542-646-00 *3-542-647-00	LEVER, FWD SHAFT, SELECTOR CONTROL LEVER	
171	7-624-112-04	RETAINING, RING E-8	
172	7-624-109-04	RETAINING, RING E-5	
	7-624-108-04	RING, RETAINING E-4	
174 175	7-624-106-04 7-621-759-45	RING, RETAINING E-3 +PSW, 2.6X6	
	7-621-759-45	+PSW, 2.6X12	
177		WASHER, 6	
178	3-701-443-11	WASHER, 5 (t=0.25)	
1.70	3-701-443-21	WASHER, 5 (t=0.5)	
179	3-542-844-00	KNOB, FAST FORWARD CONTROL	



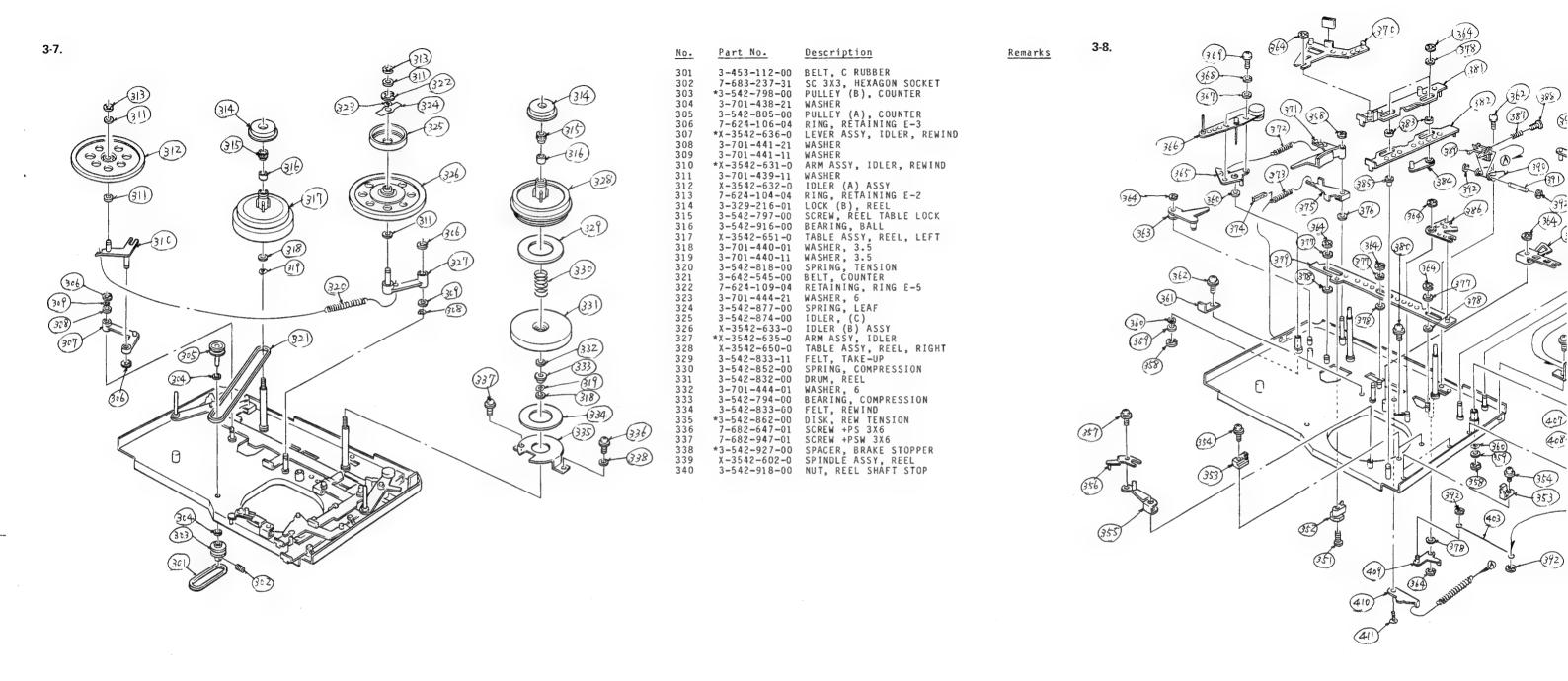
Remarks



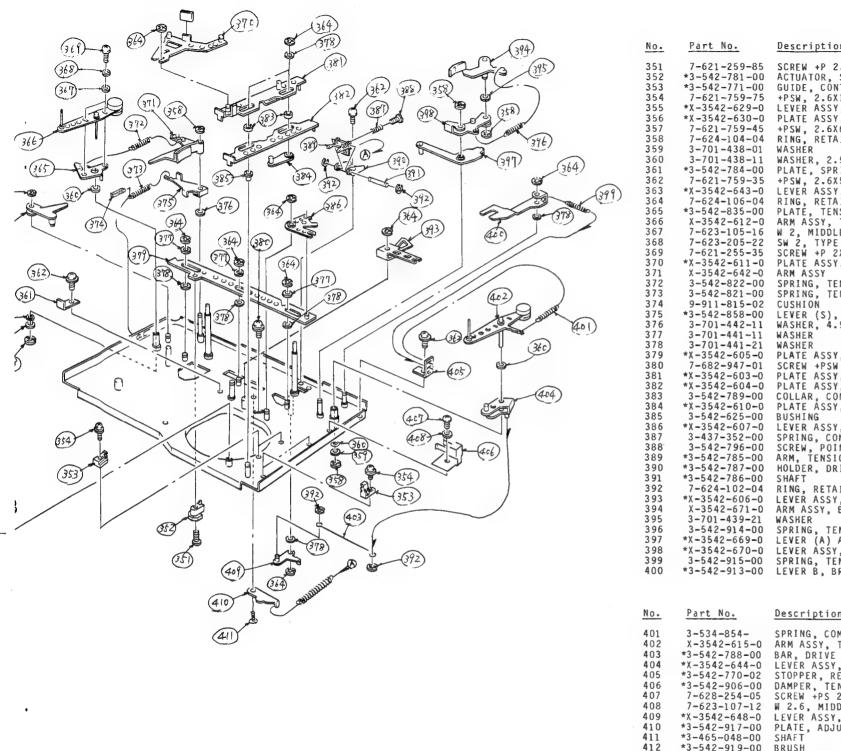




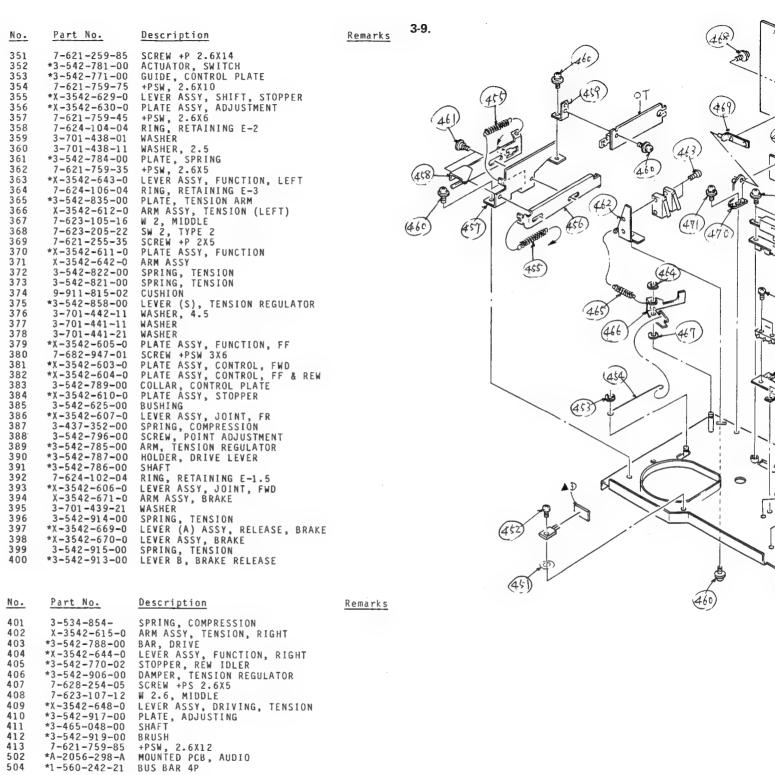
No.	Part No.	Description	Remarks
251 ? 252253 2542556 257258 257258 2601262 261266 267266 267266 267271 273274 275276 2764	0-056-108-00 3-329-218-01 *3-329-202-01 3-146-310-00 X-3472-048-X 3-542-772-00 X-3542-645-0 3-542-839-00 7-621-559-38 3-142-804-00 *3-329-234-01 7-683-403-04 7-623-205-22 7-621-995-04 7-688-001-12 7-621-996-14 7-621-712-68 7-627-552-97 7-688-008-04	SPRING, COMPRESSION BRACKET, T.C HEAD SCREW ROLLER ASSY HOLDER, ROLLER SHAFT ASSY, ROLLER COVER, HEAD SCREW +K 2.6X5 GUIDE, TAPE BASE, HEAD BOLT, HEXAGON SOCKET 3X6 SW 3, TYPE 2 BOLT, HEXAGON SOCKET 2X5 BOLT, HEXAGON SOCKET 2.6X6 W 2, MIDDLE BOLT, HEXAGON SOCKET 2.6X8 SET-SCT, HEX. 2.6X8 SET-SCT, HEX. 2.6X8 SCREW, PRECISION +P 1.7X6 W 1.7 SMALL BRACKET, PB HEAD SPRING, COMPRESSION CASE, (B) PLAYBACK SHIELD BRACKET, REC HEAD SPACER SPACER SPACER TCH HEAD, ERASE HEAD, PB	
TCH	8-825-622-10	HEAD, RECORDING RF284-22	

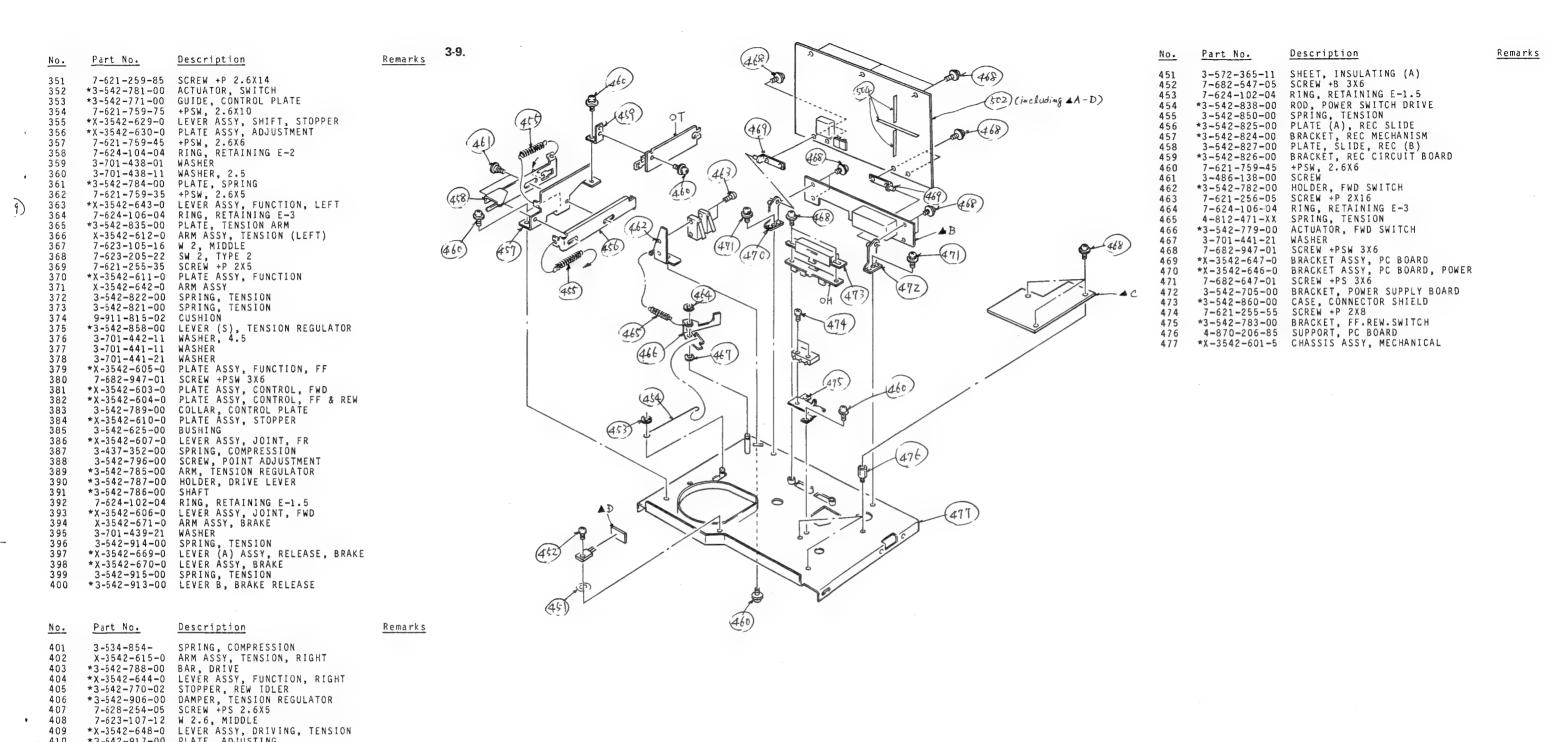


460)



502 504





*3-542-917-00 PLATE, ADJUSTING

7-621-759-85 +PSW, 2.6X12 *A-2056-298-A MOUNTED PCB, AUDIO

*3-465-048-00 SHAFT *3-542-919-00 BRUSH

*1-560-242-21 BUS BAR 4P

ELECTRICAL PARTS

SECTION 4 ELECTRICAL PARTS LIST

- NOTE:

 Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.
- CAPACITORS:
 MF:μF, PF:μμF.
- RESISTORS · All resistors are in ohms. · F : nonflammable
- COILS · MMH : mH, UH : μH
- SEMICONDUCTORS
- In each case, U : μ, for example: UA...: μΑ..., UPA...: μΡΑ..., UPC...: μPC, UPD...: μPD...

The components identified by shading and mark Aare critical for safety.

Replace only with part number specified.

9					1							
	ELECTRIC	AL PARTS				ELECTRICAL PARTS						
Ref.No.	Part No.	Descriptio	n			Ref.No.	Part No.	Description				
501 502 503	1-548-508-00 *A-2056-298-A *A-2056-299-A	TIMER, TAP MOUNTED PC MOUNTED PC	B, AUDIO			C129 C130 C131 C132	1-107-310-00 1-107-165-00 1-141-034- 1-130-297-00	MICA MICA CAP, TRIMMER FILM	220PF 56PF 120PF 0.01MF	5% 5%	500V 500V 100V	
504 505 506	*1-560-242-21 *1-560-060-00 *1-560-062-00	BUS BAR 4P PIN, CONNE PIN, CONNE	CTOR 2P			C133 C141 C142	1-130-303-00 1-130-683-00 1-131-522-00	FILM FILM TANTALUM	0.018MF 0.027MF 10MF	5% 2% 20%	100V 630V 25V	
507 508 509	*1-560-064-00 *1-560-603-00 *1-560-709-00	PIN, CONNE PIN, CONNE PIN, CONNE	CTOR 4P			C143 C144 C145	1-131-522-00 1-136-169-00 1-130-299-00	TANTALUM FILM FILM	10MF 0.22MF 0.012MF	20% 5% 5%	25V 50V 100V	
510 511 512	*1-564-505-11 *1-564-505-21 *1-564-505-31	PLUG, CONN PLUG, CONN PLUG, CONN	ECTOR 2P			C146 C147 C148	1-107-165-00 1-130-273-00 1-131-522-00	MICA FILM TANTALUM	56PF 0.001MF 10MF	5% 5% 20%	500V 100V 25V	
513 514 515	*1-564-505-41 *1-564-506-11 *1-564-507-11	PLUG, CONN PLUG, CONN PLUG, CONN	ECTOR 3P			C149 C150 C151	1-131-522-00 1-107-310-00 1-123-380-00	TANTALUM MICA ELECT	10MF 220PF 1MF	20% 5% 20%	25V 500V 50V	
516 517 518	*1-564-507-21 *1-564-507-31 *1-564-507-41	PLUG, CONN PLUG, CONN PLUG, CONN	ECTOR 4P			C152 C153 C161	1-123-306-00 1-162-306-31 1-123-356-00	ELECT CERAMIC ELECT	47MF 0.01MF 10MF	20% 30% 20%		
519 520 521	*1-564-508-11 *1-564-509-11 *1-564-517-11	PLUG, CONN PLUG, CONN PLUG, CONN	ECTOR 6P			C162 C163 C201	1-136-163-00 1-123-307-00 1-162-306-31	FILM ELECT CERAMIC	0.068MF 100MF 0.01MF	5% 20% 30%	50V 10V 16V	
522 523 C101	*1-564-519-11 *1-564-521-11 1-162-306-31	PLUG, CONN PLUG, CONN CERAMIC		30%	160	C202 C203 C204	1-123-370-00 1-123-370-00 1-162-294-31	ELECT ELECT CERAMIC	10MF 10MF 0.001MF	20% 20% 10%	63V 63V 50V	
C1 02 C1 03 C1 04	1-123-370-00 1-123-370-00 1-162-294-31	ELECT ELECT CERAMIC	10MF 10MF 0.001MF	20% 20% 10%	63V 63V 50V	C205 C206 C207	1-123-356-00 1-123-356-00 1-162-294-31	ELECT ELECT CERAMIC	10MF 10MF 0.001MF	20% 20% 10%	50V 50V 50V	
C105 C106 C107	1-123-356-00 1-123-356-00 1-162-294-31	ELECT ELECT CERAMIC	10MF 10MF 0.001MF	20% 20% 10%	50V 50V 50V	C208 C209 C210	1-123-307-00 1-162-294-31 1-124-185-00	ELECT CERAMIC ELECT	100MF 0.001MF 4.7MF	20% 10% 20%	10V 50V 50V	
C108 C109 C110	1-123-307-00 1-162-294-31 1-124-185-00	ELECT CERAMIC ELECT	100MF 0.001MF 4.7MF	20% 10% 20%	10V 50V 50V	C211 C212 C213	1-136-167-00 1-131-522-00 1-131-522-00	FILM TANTALUM TANTALUM	0.15MF 10MF 10MF	5% 20% 20%	50V 25V 25V	
C111 C112 C113	1-136-167-00 1-131-522-00 1-131-522-00	FILM TANTALUM TANTALUM	0.15MF 10MF 10MF	5% 20% 20%	50V 25V 25V	C214 C221 C222	1-107-310-00 1-131-522-00 1-131-522-00	MICA TANTALUM TANTALUM	220PF 10MF 10MF	5% 20% 20%	500V 25V 25V	
C114 C121 C122	1-107-310-00 1-131-522-00 1-131-522-00	MICA TANTALUM TANTALUM	220PF 10MF 10MF	5% 20% 20%	500V 25V 25V	C223 C224 C225	1-107-310-00 1-123-380-00 1-123-306-00	MICA ELECT ELECT	220PF 1MF 47MF	5% 20% 20%	500V 50V 10V	
C123 C124 C125	1-107-310-00 1-123-380-00 1-123-306-00	MICA ELECT ELECT	220PF 1MF 47MF	5% 20% 20%	500V 50V 10V	C226 C227 C228	1-136-169-00 1-131-520-00 1-131-520-00	FILM TANTALUM TANTALUM	0.22MF 22MF 22MF	5% 20% 20%	50V 16V 16V	
C126 C127 C128	1-136-169-00 1-131-520-00 1-131-520-00	FILM TANTALUM TANTALUM	0.22MF 22MF 22MF	5% 20% 20%	50V 16V 16V	C229 C230 C231	1-107-310-00 1-107-165-00 1-141-034-	MICA MICA CAP,TRIMMER	220PF 56PF 120PF	5% 5%	500 V 500 V	

Ref.No.	Part No.	Descripti	on			Ref.No.	Part No.	Descript	<u>i on</u>		
C232	1-130-297-00	FILM	0.01MF	5%	100V	C610	1-162-306-31	CERAMIC	0.01MF	30%	
C233	1-130-303-00	FILM	0.018MF	5%	100V	C611	1-162-306-31	CERAMIC	0.01MF	30%	
C241	1-130-683-00	FILM	0.027MF	2%	630V	C612	1-162-306-31	CERAMIC	0.01MF	30%	
C242	1-131-522-00	TANTALUM	10MF	20%	25V	C701	1-123-618-00	ELECT	22MF	30%	6.3V
C243	1-131-522-00	TANTALUM	10MF	20%	25V	C702	1-162-306-31	CERAMIC	0.01MF		16V
C244	1-136-169-00	FILM	0.22MF	5%	50V	C703	1-162-306-31	CERAMIC	0.01MF		16V
C245	1-130-299-00	FILM	0.012MF	5%	100V	C704	1-162-306-31	CERAMIC	0.01MF	30%	16V
C246	1-107-165-00	MICA	56PF	5%	500V	C705	1-162-306-31	CERAMIC	0.01MF	30%	16V
C247	1-130-273-00	FILM	0.001MF	5%	100V	C706	1-162-306-31	CERAMIC	0.01MF	30%	16V
C248	1-131-522-00	TANTALUM	10MF	20%	25V	C707	1-162-306-31	CERAMIC	0.01MF	30%	16V
C249	1-131-522-00	TANTALUM	10MF	20%	25V	C708	1-162-306-31	CERAMIC	0.01MF	30%	16V
C250	1-107-310-00	MICA	220PF	5%	500V	C709	1-162-306-31	CERAMIC	0.01MF	30%	16V
C251 C252 C253	1-123-380-00 1-123-306-00 1-162-306-31	ELECT ELECT CERAMIC	1MF 47MF 0.01MF	20% 20% 30%	50V 10V 16V	C710 C711 C721	1-162-207-31 1-162-207-31 1-	CERAMIC CERAMIC	22PF 22PF 220PF	5% 5%	50V 50V
C261 C262 C263	1-123-356-00 1-136-163-00 1-123-307-00	ELECT FILM ELECT	10MF 0.068MF 100MF	20% 5% 20%	25V 50V 10V	C722 C723 C724	1- 1- 1-		220PF 0.1MF 0.0033MF		
C301 C302 C303	1-131-450-00 1-131-450-00 1-131-450-00	TANTALUM TANTALUM TANTALUM	1MF 1MF 1MF	20% 20% 20%	50V 50V 50V	C725 C726 C727	1- 1- 1-		220PF 220PF 0.01MF		
C304 C304 C311 C312	1-131-450-00 1-131-520-00 1-131-450-00 1-131-450-00	TANTALUM TANTALUM TANTALUM TANTALUM	1MF 22MF 1MF 1MF	20% 20% 20% 20%	50V 16V 50V 50V	C728 C729 C730	1- 1- 1-		0.01MF 0.01MF 0.01MF		
C313	1-123-333-00	ELECT	100MF	20%	16V	C801	1-110-199-00	MYLAR	0.0022MF	5%	50V
C314	1-123-333-00	ELECT	100MF	20%	16V	C802	1-136-157-00	FILM	0.022MF	5%	50V
C315	1-131-450-00	TANTALUM	1MF	20%	50V	C803	1-136-173-00	FILM	0.47MF	5%	50V
C316	1-131-450-00	TANTALUM	1MF	20%	50V	C804	1-136-173-00	FILM	0.47MF	5%	50V
C317	1-162-306-31	CERAMIC	0.01MF	30%	16V	C805	1-123-356-00	ELECT	10MF	20%	25V
C318	1-123-356-00	ELECT	10MF	20%	50V	C806	1-123-356-00	ELECT	10MF	20%	25V
C319	1-124-282-00	ELECT	22MF	20%	25V	C807	1-136-159-00	FILM	0.033MF	5%	50V
C320	1-124-282-00	ELECT	22MF	20%	25V	C808	1-136-155-00	FILM	0.015MF	5%	50V
C321	1-123-336-00	ELECT	470MF	20%	25V	C809	1-131-355-71	TANTALUM	2.2MF	20%	25V
C322	1-123-336-00	ELECT	470MF	20%	25V	C810	1-123-333-00	ELECT	100MF	20%	16V
C323	1-131-450-00	TANTALUM	1MF	20%	50V	C811	1-123-322-00	ELECT	330MF	20%	16V
C324	1-131-450-00	TANTALUM	1MF	20%	50V	C812	1-136-167-00	FILM	0.15MF	5%	50V
C325	1-123-333-00	ELECT	100MF	20%	16V	C813	1-136-164-00	FILM	0.082MF	5%	50V
C326	1-123-333-00	ELECT	100MF	20%	16V	C814	1-136-153-00	FILM	0.01MF	5%	50V
C327	1-162-306-31	CERAMIC	0.01MF	30%	16V	C815	1-130-188-00	FILM	0.01MF	5%	100V
C331 C332 C333	1-123-333-00 1-123-333-00 1-123-381-00	ELECT ELECT	100MF 100MF 2.2MF	20% 20% 20%	16V 16V 50V	C816 C817 C818	1-136-158-00 1-110-204-00 1-162-207-31	FILM MYLAR CERAMIC	0.027MF 0.0056MF 22PF	5% 5% 5%	50V 50V 50V
C334	1-123-369-00	ELECT	4.7MF	20%	50V	C819	1-162-219-31	CERAMIC	68PF	5%	50V
C335	1-123-307-00	ELECT	100MF	20%	10V	C820	1-162-219-31	CERAMIC	68PF	5%	50V
C336	1-162-286-31	CERAMIC	220PF	10%	50V	C901	1-123-706-	ELECT	470MF	20%	35V
C337	1-136-169-00	FILM	0.22MF	5%	50V	C902	1-123-706-	ELECT	470MF		35V
C338	1-123-321-00	ELECT	220MF	20%	16V	C903	1-131-520-00	TANTALUM	22MF		16V
C339	1-123-308-00	ELECT	220MF	20%	10V	C905	1-123-345-00	ELECT	100MF		35V
C340	1-123-306-00	ELECT	47MF	20%	10V	C906	1-123-345-00	ELECT	100MF	20%	35V
C601	1-123-308-00	ELECT	220MF	20%	10V	C909	1-107-206-00	MICA	15PF	5%	500V
C602	1-123-308-00	ELECT	220MF	20%	10V	C910	1-107-206-00	MICA	15PF	5%	500V
C603	1-124-182-00	ELECT	1MF	20%	50V	C911	1-123-374-00	ELECT	100MF	20%	63V
C604	1-124-182-00	ELECT	1MF	20%	50V	C912	1-162-294-31	CERAMIC	0.001MF	10%	50V
C605	1-162-306-31	CERAMIC	0.01MF	30%	16V	C913	1-123-356-00	ELECT	10MF	20%	50V
C606	1-123-379-00	ELECT	0.47MF	20%	50V	C914	1-123-359-00	ELECT	47MF		50V
C607	1-124-183-00	ELECT	2.2MF	20%	50V	C915	1-162-306-31	CERAMIC	0.01MF		16V
C608	1-123-307-00	ELECT	100MF	20%	10V	C916	1-123-334-00	ELECT	220MF		25V

ELECTRICAL PARTS

ELECTRICAL PARTS	ELECTRICAL PARTS	ELECTRICAL PARTS	ELECTRICAL PARTS
Ref.No. Part No. Description	Ref.No. Part No. Description	Ref.No. Part No. Description	Ref.No. Part No. Description
C917 1-162-306-31 CERAMIC 0.01MF 30% 16V C918 1-123-334-00 ELECT 220MF 20% 25V C919 1-123-323-00 ELECT 470MF 20% 16V	EH 1-543-272-11 HEAD, ERASE IC301 8-759-910-75 IC LF353DP	Q201 8-729-334-58 TRANSISTOR 2SC1345 Q202 8-729-334-58 TRANSISTOR 2SC1345 Q203 8-729-334-58 TRANSISTOR 2SC1345	R115 1-214-753-00 METAL 10K 1% 1/4W R116 1-214-755-00 METAL 12K 1% 1/4W R117 1-214-755-00 METAL 12K 1% 1/4W
C920 1-123-374-00 ELECT 100MF 20% 63V C921 1-123-336-00 ELECT 470MF 20% 25V C922 1-123-336-00 ELECT 470MF 20% 25V	IC302 8-759-745-60 IC NJM4560D IC303 8-759-910-75 IC LF353DP IC304 8-759-145-58 IC UPC4558C	Q204 8-729-334-58 TRANSISTOR 2SC1345 Q205 8-729-201-04 TRANSISTOR 2SC2878 Q206 8-729-201-04 TRANSISTOR 2SC2878	R118 1-214-741-00 METAL 3.3K 1% 1/4W R119 1-214-777-00 METAL 100K 1% 1/4W R120 1-214-715- METAL 270 1% 1/4W
C923 1-123-324-00 ELECT 1000MF 20% 16V C924 1-123-324-00 ELECT 1000MF 20% 16V C925 1-123-321-00 ELECT 220MF 20% 16V	IC305 8-759-602-33 IC CX20197 IC306 8-759-700-04 IC NJM2043D-D IC307 8-759-602-33 IC CX20197	Q207 8-729-201-04 TRANSISTOR 2SC2878 Q208 8-729-201-04 TRANSISTOR 2SC2878 Q209 8-729-201-04 TRANSISTOR 2SC2878	R121 1-214-753-00 METAL 10K 1% 1/4W R122 1-214-777-00 METAL 100K 1% 1/4W R123 1-214-777-00 METAL 100K 1% 1/4W
C926 1-123-330-00 ELECT 22MF 20% 16V C927 1-123-307-00 ELECT 100MF 20% 10V C928 1-161-937-00 CERAMIC 0.01MF 250V	IC308 8-759-145-58 IC UPC4558C IC309 8-759-600-02 IC M5218L IC310 8-759-157-52 IC UPC575C2	Q301 8-729-606-33 TRANSISTOR 2SC2603-F Q302 8-729-606-33 TRANSISTOR 2SC2603-F Q303 8-729-606-33 TRANSISTOR 2SC2603-F	R124 1-214-769-00 METAL 47K 1% 1/4W R125 1-214-769-00 METAL 47K 1% 1/4W R126 1-214-741-00 METAL 3.3K 1% 1/4W
C929 1-123-356-00 ELECT 10MF 20% 25V C930 1-123-332-00 ELECT 47MF 20% 25V	1C601 8-759-900-72 IC NE5532P 1C602 8-759-909-33 IC LM311P IC701 8-759-240-40 IC TC4040BP	Q304 8-729-606-33 TRANSISTOR 2SC2603-F Q305 8-729-900-65 TRANSISTOR DTA144ES Q306 8-729-900-65 TRANSISTOR DTA144ES	R128 1-214-741-00 METAL 3.3K 1% 1/4W R129 1-214-777-00 METAL 100K 1% 1/4W R131 1-214-737-00 METAL 2.2K 1% 1/4W
CN102 1-509-176-31 CONNECTOR (RECEPTACLE) 3P CN101 1-509-184-31 CONNECTOR (RECEPTACLE) 3P	1C703 8-759-205-86 1C TC5504AP-3 1C704 8-759-140-11 1C UPD4011BC	Q601 8-729-606-33 TRANSISTOR 2SC2603-F Q602 8-729-606-33 TRANSISTOR 2SC2603-F	R132 1-214-745-00 METAL 4.7K 1% 1/4W R133 1-214-777-00 METAL 100K 1% 1/4W
CN201 1-509-184-31 CONNECTOR (RECEPTACLE) 3P CN202 1-509-176-31 CONNECTOR (RECEPTACLE) 3P CN301 1-562-973-11 SOCKET, CONNECTOR 7P	IC706 8-759-240-69 IC TC4069UBP IC707 8-759-240-13 IC TC4013BP	Q604 8-729-900-89 TRANSISTOR DTC144ES Q801 8-729-606-33 TRANSISTOR 2SC2603-F	R136 1-214-719-00 METAL 390 1% 1/4W R137 1-214-761-00 METAL 22K 1% 1/4W
CN601 1-509-184-31 CONNECTOR (RECEPTACLE) 3P CN901 1-509-177-31 CONNECTOR (RECEPTACLE) 4P CP1 1-464-555-11 CONVERTER UNIT, DC-DC	1C708 8-759-203-68 IC TC74HC4040P 1C711 8-759- IC 1C712 8-759- IC	Q802 8-729-180-92 TRANSISTOR 2SD809-K Q803 8-729-180-92 TRANSISTOR 2SD809-K Q804 8-729-900-65 TRANSISTOR DTA144ES	R138 1-214-777-00 METAL 100K 1% 1/4W R139 1-214-705-00 METAL 100 1% 1/4W R140 1-214-767-00 METAL 39K 1% 1/4W
CP2 1-464-552-11 OSCILLATION UNIT, BIAS D101 8-719-107-94 DIODE 1SS202-1 D102 8-719-107-94 DIODE 1SS202-1	IC713 8-759- IC IC714 8-759- IC IC715 8-759- IC	Q805 8-729-900-65 TRANSISTOR DTA144ES Q806 8-729-900-65 TRANSISTOR DTA144ES Q807 8-729-900-65 TRANSISTOR DTA144ES	R141 1-214-769-00 METAL 47K 1% 1/4W R142 1-247-815-00 CARBON 220 5% 1/6W R143 1-247-879-00 CARBON 100K 5% 1/6W
D103 8-719-910-65 DIODE HZ6B2L D104 8-719-910-65 DIODE HZ6B2L D105 8-719-910-65 DIODE HZ6B2L	IC716 8-759- IC IC717 8-759- IC IC801 8-751-930-00 IC CX-193	Q808 8-729-900-89 TRANSISTOR DTC144ES Q901 8-729-141-43 TRANSISTOR 2SD414 Q902 8-729-167-62 TRANSISTOR 2SC2676	R144 1-214-767-00 METAL 39K 1% 1/4W R145 1-214-737-00 METAL 2.2K 1% 1/4W R146 1-214-753-00 METAL 10K 1% 1/4W
D106 8-719-910-65 D10DE HZ6B2L D201 8-719-107-94 D10DE 1SS202-1 D202 8-719-107-94 D10DE 1SS202-1	IC802 8-759-700-42 IC NJM2904D IC803 8-759-700-42 IC NJM2904D IC804 8-759-178-05 IC UPC78L05	Q903 8-729-167-62 TRANSISTOR 2SC2676 Q904 8-729-203-02 TRANSISTOR 2SK30A-0 Q905 8-729-113-82 TRANSISTOR 2SA1138	R147 1-214-757-00 METAL 15K 1% 1/4W R148 1-214-753-00 METAL 10K 1% 1/4W R149 1-214-737-00 METAL 2.2K 1% 1/4W
D203 8-719-910-65 DIODE HZ6B2L D204 8-719-910-65 DIODE HZ6B2L	J301 1-507-770-00 JACK (LARGE TYPE) L901 1-408-080-00 MICRO INDUCTOR 100UH	Q906 8-729-113-82 TRANSISTOR 2SA1138 Q907 8-729-154-83 TRANSISTOR 2SB548 Q908 8-729-203-02 TRANSISTOR 2SK30A-0	R150 1-214-761-00 METAL 22K 1% 1/4W R151 1-214-872-00 METAL 2.2K 1% 1/2W R152 1-214-709-00 METAL 150 1% 1/4W
D206 8-719-910-65 DIODE HZ6B2L D301 8-719-107-94 DIODE 1SS202-1	LV101 1-407-288-00 MICRO INDUCTOR 4.7MMH LV102 1-407-289-00 MICRO INDUCTOR 6.8MMH LV103 1-407-240-00 MICRO INDUCTOR 22MMH	Q909 8-729-307-58 TRANSISTOR 2SC1775-A Q910 8-729-201-04 TRANSISTOR 2SC2878-B	R153 1-214-785-00 METAL 220K 1% 1/4W R154 1-247-859-00 CARBON 15K 5% 1/6W
D302 8-719-107-94 DIODE 1SS202-1 D303 8-719-107-94 DIODE 1SS202-1 D304 8-719-900-24 DIODE SLP24B	LV104 1-407-240-00 MICRO INDUCTOR 22MMH LV201 1-407-288-00 MICRO INDUCTOR 4.7MMH LV202 1-407-289-00 MICRO INDUCTOR 6.8MMH	Q911 8-729-201-04 TRANSISTOR 2SC2878-B Q912 8-729-900-67 TRANSISTOR DTA124XS Q913 8-729-606-33 TRANSISTOR 2SC2603-F	R155 1-214-709-00 METAL 150 1% 1/4W R156 1-214-761-00 METAL 22K 1% 1/4W R157 1-214-785-00 METAL 220K 1% 1/4W
D305 8-719-910-94 DIODE HZ9B1L D306 8-719-900-24 DIODE SLP24B D601 8-719-910-63 DIODE HZ6A3L	LV203 1-407-240-00 MICRO INDUCTOR 22MMH LV204 1-407-240-00 MICRO INDUCTOR 22MMH	Q914 8-729-606-33 TRANSISTOR 2SC2603-F Q915 8-729-606-33 TRANSISTOR 2SC2603-F Q916 8-729-606-33 TRANSISTOR 2SC2603-F	R158 1-247-859-00 CARBON 15K 5% 1/6W R161 1-214-765-00 METAL 33K 1% 1/4W R162 1-214-844-00 METAL 150 1% 1/2W
D602 8-719-910-94 DIODE HZ9B1L D603 8-719-107-94 DIODE 1SS202-1	M801 8-835-152-01 MOTOR, DC (DNF-0514A) ME101 1-520-484-11 METER, LEVEL ME201 1-520-484-21 METER, LEVEL	Q917 8-729-606-33 TRANSISTOR 2SC2603-F Q918 8-729-201-04 TRANSISTOR 2SC2878	R163 1-214-876-00 METAL 3.3K 1% 1/2W R164 1-214-779-00 METAL 120K 1% 1/4W
D801 8-719-107-94 DIODE 1SS202-1 D802 8-719-107-94 DIODE 1SS202-1 D803 8-719-910-77 DIODE HZ7C1L	PH 8-825-557-60 HEAD, PB	R101 1-215-441-00 METAL 6.8K 1% 1/6W R102 1-215-441-00 METAL 6.8K 1% 1/6W R103 1-215-403-81 METAL 180 1% 1/6W	R166 1-214-739-00 METAL 2.7K 1% 1/4W R167 1-214-739-00 METAL 2.7K 1% 1/4W
D901 8-719-910-65 DIODE HZ6B2L D902 8-719-910-65 DIODE HZ6B2L D903 8-719-200-02 DIODE 10E-2	PL1 1-518-299-91 LAMP, PILOT PL2 1-518-299-91 LAMP, PILOT Q101 8-729-334-58 TRANSISTOR 2SC1345	R104 1-215-403-81 METAL 180 1% 1/6W R107 1-214-761-00 METAL 22K 1% 1/4W R108 1-214-689- METAL 22 1% 1/4W	R168 1-214-788-00 METAL 300K 1% 1/4W R169 1-247-859-00 CARBON 15K 5% 1/6W R170 1-214-729-00 METAL 1K 1% 1/4W
D904 8-719-910-42 DIODE HZ24-2L D905 8-719-910-42 DIODE HZ24-2L D906 8-719-910-63 DIODE HZ6A3L	Q102 8-729-334-58 TRANSISTOR 2SC1345 Q103 8-729-334-58 TRANSISTOR 2SC1345 Q104 8-729-334-58 TRANSISTOR 2SC1345	R109 1-214-689- METAL 22 1% 1/4W R110 1-214-753-00 METAL 10K 1% 1/4W R111 1-214-753-00 METAL 10K 1% 1/4W	R171 1-214-777-00 METAL 100K 1% 1/4W R172 1-214-723-00 METAL 560 1% 1/4W R173 1-214-761-00 METAL 22K 1% 1/4W
D907 8-719-107-94 DIODE 1SS202-1 D908 8-719-910-65 DIODE HZ6B2L D909 8-719-107-94 DIODE 1SS202-1	Q105 8-729-201-04 TRANSISTOR 2SC2878 Q106 8-729-201-04 TRANSISTOR 2SC2878	R112 1-214-777-00 METAL 100K 1% 1/4W R113 1-214-737-00 METAL 2.2K 1% 1/4W R114 1-214-737-00 METAL 2.2K 1% 1/4W	R174 1-214-777-00 METAL 100K 1% 1/4W R175 1-214-785-00 METAL 220K 1% 1/4W R176 METAL 300 1% 1/4W
	Q107 8-729-201-04 TRANSISTOR 2SC2878 Q108 8-729-201-04 TRANSISTOR 2SC2878 Q109 8-729-201-04 TRANSISTOR 2SC2878	-7.11	

	ELECTRIC	AL PARTS					ELECTRIC	AL PARTS					ELECTRIC	AL PARTS					ELECTRIC	CAL PARTS			
f.No.	Part No.	Description				Ref.No.	Part No.	Description				Ref.No.	Part No.	Description				Ref.No.	Part No.	Description	<u>n</u>		
R177 R178 R179	 1-247-847-00 1-247-847-00		300 4.7K 4.7K	5%	1/4W 1/6W 1/6W		1-214-767-00 1-214-737-00 1-214-753-00	METAL	39K 2.2K 10K	1 %	1/4W 1/4W 1/4W	R318 R319 R320	1-247-831-00 1-247-879-00 1-247-879-00	CARBON	1K 100K 100K	5%	1/6W 1/6W 1/6W	R808 R809 R810	1-247-864-00 1-247-843-00 1-249-419-11	CARBON	24K 3.3K 1.5K	5%	1/6W 1/6W 1/6W
R180 R181 R182	1-214-761-00 1-214-785-00 1-249-429-11	METAL	22K 220K 10K		1/4W 1/4W 1/6W	R247 R248 R249	1-214-757-00 1-214-753-00 1-214-737-00	METAL	15K 10K 2.2K	1 %	1/4W 1/4W 1/4W	R321 R322 R323	1-247-857-00 1-247-857-00 1-249-421-11	CARBON	12K 12K 2.2K	5%	1/6W 1/6W 1/6W	R811 R812 R813	: : :	METAL METAL METAL	47K 47K 3.3K	1 %	1/6W 1/6W 1/6W
R183 R184 R185	1-247-857-00 1-247-889-00 1-249-429-11	CARBON	12K 270K 10K		1/6W 1/6W 1/6W	R250 R251 R252	1-214-761-00 1-214-872-00 1-214-709-00	METAL	22K 2.2K 150	1 %	1/4W 1/2W 1/4W	R331 R332 R333	1-214-705-00 1-214-705-00 1-247-879-00	METAL	100 100 100K	1%	1/4W 1/4W 1/6W	R814 R815 R817	1-247-879-00 1-247-849-00		3.3K 100K 5.6K	5%	1/6W 1/6W 1/6W
R186 R187 R191	1-247-815-00 1-247-831-00 1-214-729-00	CARBON	220 1K 1K	5% 5% 1%	1/6W 1/6W 1/4W	R253 R254 R255	1-214-785-00 1-247-859-00 1-214-709-00	CARBON	220K 15K 150	1 % 5 % 1 %	1/4W 1/6W 1/4W	R334 R335 R341	1-247-807-00 1-247-807-00 1-247-831-00	CARBON	100 100 1K	5% 5% 5%	1/6W 1/6W 1/6W	R818 R819 R820	1-247-863-00 1-244-801- 1-206-455-00	CARBON	22K 1 E 4.7	5% 5% 5%	1/6W 1/2W 2W
R192 R193 R194	1-214-785-00 1-214-785-00 1-214-777-00	METAL	220K 220K 100K	1 %	1/4W 1/4W 1/4W	R256 R257 R258	1-214-761-00 1-214-785-00 1-247-859-00	METAL	22K 220K 15K	1%	1/4W 1/4W 1/6W	R342 R343 R344	1-247-871-00 1-247-883-00 1-247-881-00	CARBON	47K 150K 120K	5%	1/6W 1/6W 1/6W	R821 R822 R823	1-247-879-00 1-247-807-00 1-247-859-00	CARBON	100K 100 15K	5%	1/6W 1/6W 1/6W
R195 R196 R197	1-214-769-00 1-247-863-00 1-249-429-11	CARBON	47K 22K 10K	5 %	1/4W 1/6W 1/6W	R261 R262 R263	1-214-765-00 1-214-844-00 1-214-876-00	METAL	33K 150 3.3K		1/4W 1/2W 1/2W	R345 R347 R348	1-247-809-00 1-249-455-11 1-247-688-11	CARBON	120 4.7 10		1/6W 1/4W 1/4W	R824 R825 R826	1-247-859-00 1-247-869-00 1-247-869-00	CARBON	15K 39K 39K	5% 5% 5%	1/6W 1/6W 1/6W
R198 R201 R202	1-214-707-00 1-215-441-00 1-215-441-00	METAL	120 6.8K 6.8K	1 %	1/4W 1/6W 1/6W	R264 R265 R266	1-214-779-00 1-214-739-00 1-214-739-00	METAL	120K 2.7K 2.7K	1 %	1/4W 1/4W 1/4W	R351 R601 R602	1-249-421-11 1-247-851-00 1-247-843-00	CARBON	2.2K 6.8K 3.3K	5%	1/6W 1/6W 1/6W	R827 R828 R829	1-249-429-11 1-215-481-00 1-215-445-00	METAL	10K 330K 10K	1 %	1/6W 1/6W 1/6W
R203 R204 R207	1-215-403-81 1-215-403-81 1-214-761-00	METAL	180 180 22K	1 % 1 % 1 %	1/6W 1/6W 1/4W	R267 R268 R269	1-214-739-00 1-214-788-00 1-247-859-00	METAL	2.7K 300K 15K	1%	1/4W 1/4W 1/6W	R603 R604 R605	1-247-857-00 1-247-857-00 1-247-871-00	CARBON	12K 12K 47K	5%	1/6W 1/6W 1/6W	R830 R831 R832	1-215-445-00 1-215-475-00 1-215-466-81	METAL	10K 180K 75K	1 %	1/6W 1/6W 1/6W
R208 R209 R210	1-214-689- 1-214-689- 1-214-753-00	METAL METAL METAL	22 22 10K	1 % 1 % 1 %	1/4W 1/4W 1/4W	R270 R271 R272	1-214-729-00 1-214-777-00 1-214-723-00	METAL	1K 100K 560		1/4W 1/4W 1/4W	R606 R607 R608	1-247-871-00 1-247-868-00 1-247-868-00	CARBON	47K 36K 36K	5%	1/6W 1/6W 1/6W	R833 R834 R835	1-249-429-11 1-249-429-11 1-249-429-11	CARBON	1 0 K 1 0 K 1 0 K	5% 5% 5%	1/6W 1/6W 1/6W
R211 R212 R213	1-214-753-00 1-214-777-00 1-214-737-00	METAL	10K 100K 2.2K	1 %	1/4W 1/4W 1/4W	R273 R274 R275	1-214-761-00 1-214-777-00 1-214-785-00	METAL	22K 100K 220K	1 %	1/4W 1/4W 1/4W	R609 R610 R611	1-247-861-00 1-247-831-00 1-249-429-11	CARBON	18K 1K 10K	5%	1/6W 1/6W 1/6W	R 9 0 1 R 9 0 2 R 9 0 3	1-214-870-00 1-214-876-00 1-214-761-00	METAL	1.8K 3.3K 22K	1%	1/2W 1/2W 1/4W
R214 R215 R216	1-214-737-00 1-214-753-00 1-214-755-00	METAL	2.2K 10K 12K	1 %	1/4W 1/4W 1/4W	R276 R277 R278	 1-247-847-00	METAL METAL CARBON	300 300 4.7K	1 % 1 % 5 %	1/4W 1/4W 1/6W	R612 R613 R614	1-247-871-00 1-247-841-00 1-247-841-00	CARBON	47K 2.7K 2.7K	5%	1/6W 1/6W 1/6W	R904 R905 R906	1-214-745-00 1-214-870-00 1-214-876-00	METAL	4.7K 1.8K 3.3K	1 %	1/4W 1/2W 1/2W
R217 R218 R219	1-214-755-00 1-214-741-00 1-214-777-00	METAL	12K 3.3K 100K	1 %	1/4W 1/4W 1/4W	R279 R280 R281	1-247-847-00 1-214-761-00 1-214-785-00	METAL	4.7K 22K 220K	1 %	1/6W 1/4W 1/4W	R615 R616 R617	1-247-857-00 1-247-823-00 1-247-807-00	CARBON	12K 470 100	5%	1/6W 1/6W 1/6W	R 9 0 7 R 9 0 7 R 9 0 8	1-214-737-00 1-214-761-00 1-214-737-00	METAL METAL	2.2K 22K 2.2K	1 % 1 %	1/4W 1/4W 1/4W 1/4W
R220 R221 R222	1-214-715- 1-214-753-00 1-214-777-00	METAL	270 10K 100K	1 %	1/4W 1/4W 1/4W	R282 R283 R284	1-249-429-11 1-247-857-00 1-247-889-00	CARBON	10K 12K 270K	5%	1/6W 1/6W 1/6W	R618 R619 R622	1-247-863-00 1-247-863-00 1-247-823-00	CARBON	22K 22K 470	5%	1/6W 1/6W 1/6W		1-214-745-00 1-247-879-00 1-249-421-11	CARBON CARBON	4.7K 100K 2.2K	5% 5%	1/6W 1/6W
R223 R224 R225	1-214-777-00 1-214-769-00 1-214-769-00	METAL		1 %	1/4W 1/4W 1/4W	R285 R286 R287	1-249-429-11 1-247-815-00 1-247-831-00	CARBON	10K 220 1K	5% 5% 5%	1/6W 1/6W 1/6W	R623 R701 R702	1-249-429-11 1-247-903-00 1-247-827-00	CARBON	1 M	5% 5% 5%	1/6W 1/6W 1/6W	R 915	1-249-429-11 1-249-421-11 1-247-871-00	CARBON CARBON	47K	5 % 5 %	1/6W
R226	1-214-741-00		3.3K		1/4W	R291	1-214-729-00	METAL	1 K 220 K	1%	1/4W 1/4W	R721 R722	1-	CARBON CARBON	10K 10K			R916 R917	1-249-429-11 1-247-879-00		10K 100K	5% 5%	1/6W 1/6W
R228 R229 R231	1-214-741-00 1-214-777-00 1-214-737-00	METAL	3.3K 100K 2.2K	1%	1/4W 1/4W 1/4W	R292 R293 R294	1-214-785-00 1-214-785-00 1-214-777-00	METAL	220K 220K 100K	1 %	1/4W 1/4W	R723 R724	1-	CARBON CARBON	56K 10K			R918 R919 R920	1-247-871-00 1-247-871-00 1-247-787-00	CARBON	47K 47K 15	5% 5% 5%	1/6W 1/6W 1/6W
R232 R233	1-214-745-00 1-214-777-00	METAL METAL	4.7K 100K	1 %	1/4W 1/4W	R295 R296	1-214-769-00 1-247-863-00	CARBON	47K 22K	5%	1/4W 1/6W 1/6W	R725 R726 R727		CARBON CARBON CARBON	56K 680K 10K			R 921 R 922 R 923	1-247-871-00 1-247-879-00 1-247-879-00	CARBON	47K 100K 100K		1/6W 1/6W 1/6W
R234 R236 R237	1-214-705-00 1-214-719-00 1-214-761-00	METAL	100 390 22K	1%	1/4W 1/4W 1/4W	R297 R298 R311	1-249-429-11 1-214-707-00 1-247-807-00	METAL	1 0K 1 2 0 1 0 0	5% 1% 5%	1/4W 1/6W	R728 R801	1- 1-247-831-00	CARBON	10K 1K	5%	1/6W	R924	1-247-831-00	CARBON	1K	5%	1/6W
Ř238 R239 R240	1-214-777-00 1-214-705-00 1-214-767-00	METAL	100K 100 39K		1/4W 1/4W 1/4W	R312 R313 R314	1-247-807-00 1-214-729-00 1-214-755-00	METAL	100 1K 12K	5% 1% 1%	1/6W 1/4W 1/4W	R802 R803 R804	1-247-831-00 1-249-429-11 1-247-879-00	CARBON	1K 10K 100K		1/6W 1/6W 1/6W	R925 R926 RH	1-247-879-00 1-247-831-00 8-825-558-20	CARBON	100K 1K	5% 5%	1/6W 1/6W
R241 R242 R243	1 -21 4-769-00 1 -247-815-00 1 -247-879-00	METAL CARBON	47K 220		1/4W 1/6W 1/6W	R315 R316 R317	1-247-783-00 1-247-879-00 1-247-831-00	CARBON CARBON	10 100K 1K	5%	1/6W 1/6W 1/6W	R805 R806 R807	1-247-831-00 1-247-850-00 1-247-864-00	CARBON CARBON		5% 5% 5%	1/6W 1/6W 1/6W	RV102 RV103	1-230-949-11 1-224-252-XX 1-224-252-XX 1-224-250-XX	RES, ADJ, RES, ADJ,	METAL GLA	ZE 10	(

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R V 1 05 R V 2 01 R V 2 02	1-226-439-00 1-230-949-11 1-224-252-XX	RES, VAR, CARBON 20K RES, VAR, CARBON 20K/20K RES, ADJ, METAL GLAZE 10K
RV203 RV204 RV205	1-224-252-XX 1-224-250-XX 1-226-439-00	RES, ADJ, METAL GLAZE 10K RES, ADJ, METAL GLAZE 2.2K RES, VAR, CARBON 20K
	1-224-491-00 1-224-661-00 1-224-661-00	RES, ADJ, METAL FILM 22K RES, ADJ, METAL GLAZE 50K RES, ADJ, METAL GLAZE 50K
	1-515-586-11 1-515-586-11 1-515-587-11 1-515-587-11	RELAY RELAY RELAY RELAY
S1 S2 S3	1-516-310-00 1-516-310-00 1-516-310-00	LEVER SLIDE SWITCH LEVER SLIDE SWITCH LEVER SLIDE SWITCH
S 4 S 5 S 6	1-516-310-00 1-554-600-11 1-554-600-11	
\$7 \$8 \$9	1-554-600-11 1-516-720-00 1-516-720-00	
\$10 \$11 \$12	1-570-390- 1-516-777-XX 1-516-503-00	
S13 S14 S15 S16	1-516-777-XX 1-553-004-00 1-553-570-00 1-553-571-00	SLIDE SWITCH SWITCH, SLIDE SWITCH, MICRO SWITCH, MICRO
SP1	1-502-541-00	SPEAKER, CONE
TCH	8-825-622-10	HEAD, RECORDING RF284-22
X701 X801	1-567-510-11 1-567-509-11	VIBRATOR, CRYSTAL VIBRATOR, CRYSTAL

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-506-528-11 3-329-235-01 3-533-950-00 3-542-892-00	PLUG, CONNECTOR 7P INDIVIDUAL CARTON STRAP, SHOULDER BAG, PROTECTION
3-542-894-01 3-542-895-01 3-542-923-00 3-542-924-	CUSHION, (RIGHT) CUSHION, (LEFT) CUSHION, LOWER CUSHION, SIDE
3-701-630-00 3-760-761-11 3-542-925-00 9-910-999-31	BAG, POLYETHYLENE MANUAL, INSTRUCTION HOLDER